

## Pep talks for faint-hearted captains in the front line

A Cook's tour of British bolt-holes where heads and local inspectors escape to muse in peace about the wreckage on the educational landscape - invariably outside their particular bailiwick and away from prying eyes.

Kirkles inspectors choose Bramley Grange, in my youth a pleasant rural manorhouse in a village called Thorne, but now perched on the edge of Leeds' suburban sprawl; Kingston-upon-Thames heads opt for West Dean, a posh but phoney stately home in the lush West Sussex downland; Cheshire inspectors trail off to HMS Conway - a bizarre landbound granite "ship" they happen to own on the Mersey Straits in the Marquess of Anglesey's estate.

Next week, it's Stockport heads at Stoke Rochford, the NUT's fake feudal pile in Lincolnshire. But the objective of the odyssey is to grapple with educational rather than architectural prostitution.

I attend these occasions in an attempt to inject a little courage into the senior ranks of our professional educators who have become very frightened of late. It has become customary to refer to the current crisis of the teaching force as one of low morale; and it is fascinating to see that



Percival Sharp... he would have been horrified.

Eric Bolton, the senior chief HMI, has now joined in the chorus.

But one of the causes of low morale is disorientation and fear among teachers about what they can properly teach and discuss with their pupils without being reported to their superiors or even to Sir Keith. It's an atmosphere that leads to lousy teaching. A bit more professional leadership in the head's study and the education office, I tell them, and the teaching will improve.

So I urge them all to stand up and be counted as professionals. If possible twice a week before breakfast. The medical profession has recently defied Parliament by refusing to become agents of the state in conducting

intimate body searches. Why should the teaching profession engage in activities which offend their fundamental professional principles - like handing over the curriculum to Sir Keith Joseph and the MSC, or running tests they find professionally unacceptable like the Kingston-upon-Thames 11-plus? My audience try to look suitably brave as I depart to try to sharpen up courage elsewhere.

I was only sorry that I had not at the time come across a piece of archaic material to read to them, as a reminder that in England, education is a locally administered service and that if heads don't like advice from above - whether from ministers or HMIs, and whether concerning peace studies or criteria for the physics curriculum - they should feel free to ignore it. It is from a letter written by one of Britain's greatest directors of education, Percival Sharp, to all his Sheffield heads in 1931. After explaining that HMI's advice should not be rejected out of hand, he came up with the following rather splendid sentence:

Notwithstanding this, it is expected that teachers will not adopt suggestions about which they have substantial doubts as to their wisdom or practicability merely on the grounds of amiable or even of courteous acquiescence.

Now, I never met Percival Sharp, but I do know that he would have been horrified at the current amiable acquiescence to cowed teachers to the imposition of a centralist, curricular regime in England. He continued in his subsequent job as Secretary of the Association of Education Committees, to encourage heads - and, by implication, all teachers - to stand up and be counted.

It is sad that since the demise of the AEC and the departure of Sheila Browne to Newham College, Cambridge, there are no powerful, national professionals left to protest against the hijacking of the curriculum by Sir Keith. I shall warn the Stockport heads at Stoke Rochford to be constantly vigilant against amiable acquiescence.

## Decision time in the shadows



Amadou Mahtar M'Bow... astute and Napoleonic with petty squabbles and dubious paragonage.

On Monday, I shall be attending a meeting of the UK National Commission for UNESCO - a body charged with advising the Government whether to stay in or get out. Some months ago it seemed as though it would have been a funeral, but now that seems unlikely. My spies tell me that the Government is likely to stay in - even though Reagan will almost certainly withdraw after the Presidential elections and would like to have taken Thatcher with him. The UK National Commission is a shadowy body, which only meets in plenary when the Government wishes it to and never seems to have voted on anything before. It may actually do so on Monday.

I am for staying in, for all the irritation this notorious international bureaucracy causes. UNESCO has as its director general, Amadou-Mahtar M'Bow, an astute politician from Senegal, whose somewhat Napoleonic style riles the Brits and the Americans. It's also rather more rife than the average international organization

But the US withdrawal has little to do with such minor matters, which are endemic in all international bodies. Nor is the US action, strictly speaking, an isolationist move. It's about Reaganites are now thoroughly bitten by the imperialist bug and regard themselves as the new custodians of World Culture. They pay the UNESCO piper and if they can't get the organization to play their political-cultural tune, they're perfectly ready to set up another body to do so.

If our government finally decides to stay in, it will be partly due to a certain frisson of aristocratic distaste for the new brand of Yankee imperialism with which they would inevitably become associated.

## Forest flaw

To one of the most charming and remote corners of England, the Forest of Dean, which is finally going comprehensive. I am there to talk to the teachers at the Royal Grammar School at Berry Hill near Coleford about how they might go tertiary next year. The plan seems to be for the "practical" pupils to attend the technical college at Cinderford, while the "academic" re-enters on the grammar school site seven miles away. Hill Gloucestershire finds the money for a unified campus.

I do hope someone comes up with a better idea for launching the new college. The tertiary philosophy is an open one - in which youngsters can experiment with their skills and aspirations across the traditional trammels. Cultural and geographical apartheid seems an unpromising basis on which to start.

## Local heroes?

Apologies for getting the TUC folk on the Manpower Services Commission wrong last month. Bill Keys' TUC Commissioner colleagues are Ken Graham, the TUC's assistant general secretary, and Ken Baker of the General and Municipal Workers.

Between them they now seem to be working out a compromise in the struggle over the local authorities' 25 per cent stake in further education. It could be sealed today when the new "chairman from nowhere", Bryan Nicholson, has his first meeting with AMA representatives. If it comes off, it will represent a rare victory for local government over centralist authoritarianism.

Christopher Price

# THE TIMES Educational Supplement

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## Compulsory assessment threat upsets unions, i.e.a.s

by Biddy Passmore and Richard Garner

All requiring the regular assessment of all state school teachers - and the sacking of those who fail the test - is likely to appear in the 1985-86 session of Parliament unless teachers' leaders achieve local authority employers can agree on a voluntary scheme in talks which resume next Thursday.

The threat of legal compulsion, issued by Sir Keith Joseph, the Education Secretary, in letters to both sides last week, reflects his growing pessimism about the chances of a satisfactory compromise in the talks on a new salary regime. He has been particularly annoyed by the total opposition to assessment expressed at the recent National Union of Teachers pay conference.

But his move, presumably intended to hurry both sides into agreement, looks like having the opposite effect. Teachers' leaders reacted angrily to the content and the timing of the letter, which they received just before the first Durham meeting on next pay/paid. They are particularly upset by Sir Keith's emphasis on using assessment to weed out incompetent teachers.

Local authorities are privately angry that the Education Secretary has threatened their pitch by making his threat public at this stage. A spokesman for the Association of County Councils said this week that they wanted to reach agreement on an assessment scheme and a definition of the teachers' job before talking about sacking incompetents or linking pay to performance.

Mr Keith's letters last week but it is strongly felt in Whitehall that there is little chance of more money for a new salary deal unless it includes a clear link between pay and performance.

The Government's move was described as a grave insult to the professional competence of Britain's teachers by Mr Barry Sheerman, a Labour front-bench spokesman on education.

The Opposition would campaign against this "insufferable" proposal. Meanwhile, Sir Keith's initiative appears to herald the shelving of another plan which is deeply unpopular with the teachers' unions: probation for headteachers.

It is understood that the proposal, which encountered strong opposition during consultation, will now be put on ice until the issue of assessment has been resolved.

Only one sentence directly relating to education was the Queen's Speech on Tuesday. She said: "A Bill will be introduced to give parents of children educated at public expense the right to exempt them from corporal punishment. My Government will continue to develop policies to raise educational standards".

Labour's education spokesman, Mr Giles Radice, said afterwards that Labour would oppose the "opt out" approach on corporal punishment as it was unworkable, and calling should be abolished completely. He added that it was an "ironic coincidence that in the week when the HMI report on Norfolk showed what was happening in schools, we should have this extremely complacent sentence about raising educational standards".

The Liberal leader, Mr David Steel, also fiercely attacked the Government's stance on caning.

A Bill allowing polytechnics and colleges to keep the profits from their inventions and consultancy work will also be introduced.

Assessment: full report, page 7



The miners' strike is now having a clear effect on school life in several parts of the country - as in Eastington, County Durham where this miner helps feed his child at a free canteen.

Significantly in the long term, children's attitudes in the mining areas, particularly towards the police, are becoming more hostile, to the alarm of teachers and parents.

TES reporters visited schools in Nottinghamshire, Durham, South Wales and Scotland to see how they were coping. Reports page 8 and 9.



## Tuition cash in jeopardy

Fears were growing this week that cuts in the student grants budget, to be announced by the Chancellor next week, may mean some British parents have to start paying tuition fees for their student children.

It is believed that the cut may go beyond abolition of the minimum maintenance grant (now £205) to a demand that richer parents pay some or all of the £500 tuition fee.

● Gabbitts-Thring Careers, which gets commission from higher education institutions for helping to place overseas students in universities and polytechnics, collapsed last week. The company said the cut in government aid to overseas students was partly to blame.

## Alarm over special school rolls

by Howard Sharron

An alarming increase in the proportion of primary age children going into segregated special education has been discovered by researchers at the Open University.

And contrary to commonly-held expectations, it is claimed the 1981 Education Act is unlikely to reduce the numbers being moved to special schools.

The figures, which fundamentally dispute previous assumptions that integration was gathering pace, are in a report by Will Swann, a lecturer at the Open University, to be published next March in the *Oxford Review of Education*.

The research looked at Department of Education figures for the English special school population and compared them with the total school population during 1978-82. In 1982 there were 43,144 children aged between five and 10 in special schools. Rolls fell in primary schools by 13.26 per cent over the period, but the special school population dropped only 6.39 per cent.

But, the figures become yet more dramatic when categorized by handicap. The proportion of children aged 5 to 10 in ESN (M) schools increased

during this period by 28 per cent. Figures for both primary and secondary age pupils showed an increase in ESN (S) schools of 8 to 8.5 per cent as a proportion of the total child population. In schools for the maladjusted, the proportionate rates increased by 12.1 per cent in the primary school age group and 9.3 per cent in the secondary age group. However, there is clear evidence of integration of children with visual or hearing impairment, the report says.

Mr Swann said the increase in pupils placed in ESN (M) schools could not be laid at the door of more intolerant mainstream schools.

He said: "One possible cause might be the growth of nursery units attached to special schools. It seems as if they act as a reservoir of potential special school pupils".

He continued: "The 1981 Act itself placed great emphasis on the identification and assessment of children which has led to more children being referred to special schools. Rather than looking at why we are not meeting children's special needs, it might be more constructive to ask why comprehensive schooling is not properly comprehensive."

## NOTICEBOARD

### PEOPLE...

**SCHOOL APPOINTMENTS**  
Mr Timothy Gould, director of music at Leighton Park School, Reading, to be director of music at Wells Cathedral School, Somerset from April 1985.  
Mrs Eve Hambly, deputy head of Nightingale Primary School, Woolwich, to be head of Belenden Primary School, Dulwich.  
Mrs Raela Croft, head of Old Ford Infants School, to be head of Woodhill Primary School, Woolwich.  
Mrs Olma Manyan, acting deputy head of Penion Primary School, Islington, has been appointed head of the newly amalgamated Camelford Junior Mixed and Infants schools, Pocklington.  
**COLLEGE APPOINTMENT**  
Mr Christopher Tompsett, head of mathematics, Queen Elizabeth School and Community College, Crediton, to be head of the Information Technology Development Unit at Kingston College of Further Education.

### CONFERENCES...

November 9  
NATFHE languages section conference on "Computer Assisted Language Learning" and annual meeting. Details from M Devine, 3 Highgate Avenue, London N6 01 348 248.  
November 10  
Handwriting study day organized by ILEA Diagnostic Centre for Learning Difficulties, and the Handwriting Interest Group. Speakers include Stuart Bedford,

Margaret McCulloch, Brenda Brown, Philomena Pickard, Christopher Jarman and Peter Smith. Details from Branch Brown, Advisory Teacher, Tarnworth Centre, Tarnworth Road, Harold Hill, Romford, Essex.  
National Association for Primary Education, Oxfordshire branch, conference on numeracy at Brookside Primary School, Bucknash Road, Bicester. Speakers will be Rod Sherman and Sir Wilfred Cockcroft. Fee, including lunch, £2.50. Applications to Barbara Lallies, 21 Stapleton Road, Headington, Oxford.

November 17  
Centres for the Study of Comprehensive Schools south-west region conference on "WEC Certificate of Education (Mid Glamorgan Scheme)" at Pencoed Comprehensive School, Bridgend. Details from Mr D. Jones deputy head, Newport Betsi, Comprehensive School, Newport, Gwent.

November 23-25  
Standing Committee for the Education and Training of Teachers Conference on "The New 14-19 Curriculum" at the Priory House Hotel, Leicester. Fee £70 to members, £85 to non-members. Applications to Mr J. Taylor, Academic Secretary, SCET, Hamilton House, Mableton Place, London WC1 9BH.

November 27-29  
Centre for Multicultural Education at the University of London Institute of Education conference on "The History of Black People in London. It will deal with the period from 1945 to the present and will cover the history of people born in Asia and their British-born descendants as well as Asians and West Indians. It will also examine the role of women and economic activities of black people. Those interested in presenting papers or attending should write to Peter Fraser, Centre for Multicultural Education, University of London Institute of Education, 20 Bedford Way, London WC1.

### EVENTS...

November 7  
The Brunel University Lecture: Professor Geoffrey Allen, former chairman of the Schools' Engineering Research Council, on UK Research in Lecture Centre Theatre C, Brunel University, Uxbridge, Middlesex at 3pm. Fee: tickets available from Uxbridge £1.50 and £2.50.  
Until December 1  
Dorset schools sixth-form art exhibition at the Dorset County Museum, Dorchester, Dorset.

Include drawing, painting, ceramics, sculpture, photography, textiles, and general design. Details from the Gallery, Dorchester 62755.  
December 4, 5, and 6  
Royal Institution IEE Lecture for school teachers on "Electrochemistry at Work" by Dr Mary Archer at The Royal Institution, 530 pm. Applications for tickets to the lectures secretary, 21 Albermarle Street, London W1.

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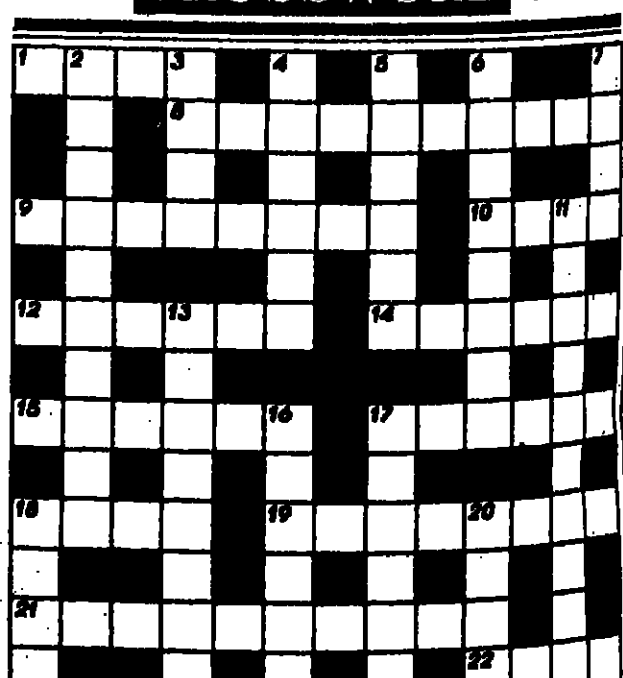
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### PUBLICATIONS...

Questions Governors Ask  
A handbook for school governors by Joan Salts, published by the Advisory Centre for Education. It deals with common problems in a question and answer form and includes an appendix on the framework of school government. It is available for £2, including postage from ACE, 18 Victoria Park Square, London E2 9PF.  
The Association for the Study of Modern and Contemporary France publishes a quarterly newsletter for schools and colleges. It is available from Jeff Bridgford, School of Modern Languages, Lippman Building, Sandford Road, Newcastle upon Tyne NE1 5ST. Annual subscription £2 for individuals, £4.50 for institutions. CET News

The latest issue includes articles about Prestel in education and training, audio-conferencing, open learning and copyright. The newsletter, which is free and issued termly, is available from Sharon Newton, Editor, CET News, Council for Educational Technology, 3 Devonshire Street, London W1N 2BA.

## No 176 CROSSWORD by Rufus



**Across**  
1 Address of the Quakers (4)  
8 Little nap on a bed rather badly made (10)  
9 Holhead greatly put out by state of spathy (8)  
10 prepares to meet an invasion from Mars (4)  
12 Is ecstatic being a new parent (6)  
14 Managed to get delectable's rank (6)  
15 Loved action and colour (6)  
17 The last of the bounds? (8)  
18 A good song? (4)  
19 Identified the boy embracing the pretty girl (6)  
21 A way to regulate the economy from Roman times (10)  
22 One may get one's hooks into them (4)  
**Down**  
2 Back before the rain! (4,3,3)  
3 Attack the copper with acid (4)  
4 Where the Ark went last (6)  
5 The instruction he gets in brief (6)  
6 Out into a bed made incorrectly (8)  
7 See 18 down  
8 House-building team on site (10)  
9 Put some notes in order? (8)  
16 A drill form of currency (6)  
17 Incidence of the crime right is inviting disaster (6)  
18 and 7 down: Not a description of a housekeeper? (6)  
20 One kind of stone fruit (4)  
Solution to puzzle 175

## Defiant ILEA to keep up spending

by David Lister

The Inner London Education Authority will this month become the first local authority to defy the Government.

The ILEA looks set to announce a budget on November 20 which, far from cutting costs by up to £75m, as Whitehall has ordered, will maintain spending in line with parental views.

Next week, the authority will announce the results of a major consultation with London parents, teachers and governors which is expected to

show almost total opposition to education cuts.

A warning of the coming conflict with central government was given on Wednesday by ILEA leader Frances Morrell when she addressed a meeting of teachers on strike for a day in protest at the rate-capping legislation.

"She said: 'The law obliges us to consult on our budget before taking our decision. This year we have consulted more extensively than usual. 'Indeed it would not be an exaggeration to say that ILEA has held a referendum on the Government's proposals within the education service. We have had literally thousands of responses.'"

Mrs Morrell said: "When the results are announced next Monday, the wishes of the service, taken together with the wishes of Londoners as expressed in the recent MORI poll, will, I believe, provide a mandate for Labour councillors - even if that conflicts with the wishes of the Government."

## THIS WEEK

COMMENT  
PRIMARY  
SCHOOL TO WORK  
OVERSEAS NEWS  
LETTERS  
BACKLASH  
DIARY, NOTICEBOARD  
AND CROSSWORD  
CLASSIFIED

**Electronic mail**  
Virginia Makins looks at the new Times network communication scheme for schools

**Tory fears**  
Fears about losing control of the ACC may be behind Tory concern over HMI reports

**Profile**  
Carolyn O'Grady interviews the Information Technology Minister Geoffrey Fitts

**Platform**  
Bob Morris, of the AMA, fights back for local autonomy in education

**Says who?**  
A challenge to HMI's notions of good practice

**Education? No thanks**  
After 40 years it's time to admit that working class children do not want academic education

**Arts/Books**  
John A Brune on the language of Roman children; Edward Bligh on the art of interviewing; Brian Morton on James Lees-Milne's autobiography; D A N Jones on eighteenth century French history; Frances Spalding on Kenneth Clark; Heather Neill on the *Trial of Richard III*; David Self on Radio 3's Scottish season.

**Computer textbooks**  
22-27



**EXTRA**  
36 pages on Computers

The need for a coherent policy, and an eye to the future articles on Profilo, Logo and Prestel, data handling, authoring languages and expert systems, plus reviews of software



## Turning up the heat

Sir Keith Joseph has turned up the heat under the salary structure talks (due to be resumed next Thursday) by writing to the teachers' unions, demanding progress on the regular assessment of all teaching staff as part of a new contract (page 1 and 7). The sting comes at the end of his letter when he threatens them with legislation to enforce such periodical appraisal, and to prohibit the continued employment of any teacher whose performance was deemed to be unsatisfactory.

It seems that he has told the local authority associations the same thing, and it is believed that he gave their leaders the added gloss that he expects a merit money scheme to be erected on the basis of such an assessment plan.

It has been clear for some time that Sir Keith regards a new teachers' contract, including a system of regular assessment, as a condition precedent of Government acceptance of any new salary structure which would improve the career ladder for teachers now stuck on scales one and two. Now it is being said that only acceptance of a scheme of merit payments will unlock the money and win the consent of the Cabinet.

If this is correct then the prospect of agreement in the near future is remote. When the two sides come together next Thursday, it is believed that the authorities will table the outline of a new deal, but this will be the beginning of real negotiations, not the end. The package will be complex; parts of it will be acceptable in principle to the teachers without too much difficulty, but when discussion moves from principles to pay scales and money sums, the haggling will begin and it will be exceedingly difficult to bridge the gap.

Set this aside and move on to assessment and here it will be difficult to get agreement in principle – though not necessarily impossible. Without the assent of the NUT there can be no agreement. So far the NUT have been highly suspicious of regular assessment for experienced teachers, but the other teachers' unions have shown much more interest in the idea, especially if it were combined with better arrangements for in-service training, and fairer procedures for promotion.

The real difficulties about assessment, however, may not be at the level of general principle. Acceptance of an assessment scheme may well turn on matters of detail which have yet to be thrashed out (and which it would logically be premature to negotiate until more has been learnt from the pilot projects which are now stuck in the pipeline).

All these unsolved questions make it unlikely that there can be a quick agreement. But when you add the other, much larger, difficulties posed by a determination to link assessment to merit money, then even greater scepticism must be the order of the day. There isn't a dog's chance of getting such a scheme through by agreement in the foreseeable future and there seems little point in pretending that there is.

Various consequences follow. The first is that, unless Sir Keith's latest pitch is simply a way of raising the stakes prior to settling for much less, it looks as if he has given up hope of getting anything out of the structure talks or by agreement with the unions. This is not what he is saying; on the record he still wants to see progress in these talks and holds out such progress as the

best way to achieve a pay increase.

But without suggesting he is less than sincere – or minimizing the length of time the teachers and local authorities have wasted since Shirley Williams' Green Paper of 1977 raised these issues about the management of the teaching force – it has to be recognized that he is now laying down impossible conditions.

This, then, turns the spotlight onto the threat of legislation. This must be taken seriously, but again, a high degree of scepticism is in order. There is already good reason to doubt whether the kind of formal assessment he is asking for would be more effective than the informal methods now used by "good" i.e. a.s. Formality threatens to be more contentious and more contested. What is done now, informally, often eases out the ineffective teacher by consent; when everything is done by more formal procedures, the legalists will have a field-day and it may become, paradoxically, harder, not easier, to manage the teaching force.

But, even so, let us for the sake of argument accept that something more formal is required and that this might come by negotiation and be made to work, and even work well. This would be one thing. A formal scheme, however, imposed on the teachers and the local authorities, against their will, by a Secretary of State whom both could blame would be quite another. It would be doomed to failure before it started. This must surely be an inauspicious preliminary to next week's meeting. Sir Keith will be fortunate if the teachers' unions suppress their first instinct which must be to call his bluff. It is important now to recognise the pressures

on all the parties, to the present argument, to seek ways of avoiding the harvest of a hundred, malice and all uncharitableness, will follow another prolonged dispute.

Sir Keith has his own, obvious, problem: wants to bring about changes, of which regular assessment of all teachers is his top priority. (He is now, wisely, prepared to let that he may have to drop his bright idea for probation for heads, and this makes it even more important, in his view, to devise an acceptable assessment scheme for all which could include them.) He needs something to fall back on if structure talks fail and, inevitably, as Secretary of State, his instinct is to look to the law. As merit money – one of his pressures is ideological if he is going to wave a big stick at "ineffective teachers", he also needs a carrot with which to reward merit.

But the teachers, too, have their pressures. They cannot afford to let Sir Keith intimidate them, and they have a genuine sense of grievance as an occupational group who have seen their salaries fail to keep pace with the relevant index. There is no way they could deliver an agreement on Sir Keith's terms even if they wanted to. There are, in any case, good reasons for believing that there is no acceptable, fair and equitable, merit money scheme just waiting to be discovered.

As for the i.e.a.s. they too are under pressure. Unity is already stretched to breaking point. Sir Keith's latest, most ill-judged, intervention will do nothing to make it easier for the Tory youth councils and the Labour metropolitan authorities to mend their fences – unless it be, by leading in common rejection of his tactics.

## COMMENT

### No tax on knowledge

Over the next three months, the Chancellor of the Exchequer will make up his mind on whether or not to impose VAT at 15 per cent (or some lower percentage) on newspapers, periodicals and books.

At least, that's what well-informed people believe. No such proposition has been formally put up for public discussion, but given the absurd and often unnecessary secrecy which envelops the British budget, it wouldn't be, would it? Not, that is, till it is a fait accompli in the Finance Bill.

Over the last 125 years publishers have successfully resisted various attempts to introduce a "tax on knowledge". Purchase tax was never imposed on books and papers, and till now they have been zero-rated for VAT. But it seems that the latest threat is the most serious so far.

So serious, in fact, that last week, the Society of Bookmen broke its regular custom and turned its monthly dinner (normally a private affair) into a public occasion to make propaganda against VAT. Alexander Macmillan and Peter Bagnall, managing director of W H Smith, put the case with considerable force, to an audience of the converted and their guests who included an ex-Chancellor (Roy Jenkins) and an ex-head of the Treasury (Sir Douglas Wass).

The case against stands on two legs. First, the economics of book publishing mean that a 15 per cent rise would cut sales by a similar amount – that is the nature of the market, say the economists – and in practice, because smaller sales would lead to higher unit costs, would actually cut business by 20 per cent or more.

As well as bankrupting some publishers and disappointing authors this would shut down dozens of book shops and permanently damage the distribution network. The troubles of the publishers and the booksellers would, of course, be also the troubles of the



Alexander Macmillan

book-buyers who would have to pay more for less, if they could get it at all.

Second, there is the more abstract social and political argument against a tax on means of communication which are essential for a robust democracy and a healthy culture. This is the case against a "tax on knowledge" – not helped, perhaps, by the lurid nature of best-selling bookshop paperbacks, but basically sound all the same. It goes

beyond the profit and loss account of the publishers and the booksellers to the nature of quality of the society which we are creating. And it seeks to shame the Government with the offer of a ban on skid: does Mrs Thatcher want to go down in history as the philistine PM who put the first twentieth century British tax on "knowledge, books and reading"?

For his part, Sir Douglas Wass gently told the Bookmen to concentrate on the social and political argument, not the publishers' hard luck story: the Treasury is well-used to hardening its heart against prophecies from special interest groups whenever a change is proposed.

From the educational point of view there is a particularly strong case against a tax on books. What happens in school is, in part, conditioned by what happens at home. Anything which makes it less likely that parents will buy books for their children, and have books on their shelves which children can read, is bad for the schools and will work against the raising of standards of literacy and the

capacity to learn from the written word.

L.e.a.s., of course, will be able to claim back VAT on their purchases. Not so independent schools, universities and private students for whom 15 per cent VAT would be disastrous. Moreover, Sir Douglas Wass pointed out that under the terms of the EC directive, once a class of goods has been brought under the VAT net, it cannot thereafter be zero-rated. This is a one-way street. The Government should hesitate before setting off down it, and the DES should add its own voice to the campaign against VAT on books.

... no comment

"Discuss the various methods of cleaning and then conserving a painted river, using your knowledge of Christian principles"

From the SREB CSE Religious Studies Exam, 1984.

education system serves. I am wholly against tokenism. But some 40 per cent of inner London children are born to mothers who themselves were born overseas. A new society is being born with new hopes and new aspirations. Candidates for election to the new IEA must reflect this new London.

So the first requirement of a successful new IEA is that the political parties should accept their responsibilities and live up to them.

The second requirement is that the public should insist that they do. Parents, governors, teachers, students and others who care about education should begin to raise their voices. And if existing parties put up feeble or inappropriate candidates, then perhaps London will need a new organization ready to put up its own candidates in opposition. Let us call it the "Education First" party.

Since 1870, the London School Board, the LCC and the IEA have been extraordinarily fortunate in their

political leadership. Across all political parties, there has always been talent and commitment at the top. That is true today as it has been in the past. But if there is any fault at all in the IEA, it is that its membership has been rather weak.

Will direct elections in 1986 put an end to the doily second-rate? It is usually possible in the public sector to elect someone else. This time only Londoners will be to blame if London fails to elect an education authority which is humane, responsive, efficient and which those who pay for services as well as those who use them.

Peter Newman

Extract from a recent speech at the London School Board, London, Mr Newman is chairman of the Commission for Racial Equality and former education officer for

## Engineering courses from the supermarket . . .

by Adriana Caudrey

Sainsbury's, the supermarket group, is providing £135,000 for seven Hertfordshire secondary schools to embark on a project to encourage their pupils to go into engineering.

At least 120 children will take part in the three-year scheme, which will involve doing practical work for industrial companies, research for universities, and combining forces with youngsters from France and Germany to work on pneumatics and electronics projects.

Hertfordshire County Council is

using the Engineering Education Scheme partly as a means of drawing more girls into craft, design and technology courses. Already, as a knock-on effect of the project, St Albans Girls, one of the schools participating, has introduced O and A levels in technology.

The seven schools are to be linked to five universities and polytechnics, and to several companies, where they will gain their work experience. Thorn-EMI, GEC Avionics, and a division of British Aerospace may take part.

Mr Mike Wharton, Hertfordshire's CDT adviser, said the project would provide a means of talent-spotting potential engineers. Forty-two pupils will be selected to join the course each year, and their aptitude will then be monitored.

Mr Wharton said many aspects of the course were designed to give the students a taste of real life as an engineer. Working with French and German counterparts is intended to give them an inkling of what it would be like to work for a multinational.

He said the Sainsbury Family Trust was sponsoring the scheme as part of its commitment to helping the manufacturing industry to thrive.

The schools participating are: Queen's, Bushey; Hemel Hempstead; Longdon, in Hemel Hempstead; St Albans Girls; Verulam, in St Albans; Roundwood Park, Harpenden; and Simon Balle, Hertford. The higher education establishments are: Cambridge, Southampton, and Loughborough universities, Imperial College, London, and Hatfield Poly.

## Training charity resists closure by British Shipbuilders

by Mark Jackson

One of Britain's biggest independent training organizations is defying an attempt to close it by the nationalized industry which owns it.

British Shipbuilders (Training, Education, and Safety) was set up by British Shipbuilders three years ago primarily to train its own staff. But in order to get tax and rate reliefs, it registered the company as a charity aiming to provide training for outsiders as well.

Now the organization gets more than half its work from outside shipbuilding: it runs 1,500 places for the Youth Training Scheme, three information technology centres for the Manpower Services Commission, is involved in an Open Tech robotics project, and has an income of more than £2m a year.

Its fight for survival is being strongly backed by the Charity Commissioners, who say it cannot be shut down because it is an educational charity.

Four months ago, British Shipbuilders decided to break up the company and hand over its own training to its shipyards. The plan aroused strong opposition from most of the training company's directors, who are appointed by British Shipbuilders and include a block of union representatives.

It also triggered strong concern among the maritime educational organizations and charities, who went to the Charity Commissioners. The commissioners have now issued a warning to British Shipbuilders that the responsibility for operating the company lies with its directors, who are legally its trustees.

And the commissioners say that even if the trustees decide to stop running the charity as a training organization, British Shipbuilders cannot take back its assets, which would have

to be applied to other charitable purposes.

The assets include valuable premises and equipment, some of which British Shipbuilders is likely to want to use for its own training.

Mr John Blythe, British Shipbuilders' company secretary, refused this week to discuss the training company. He would say only that British Shipbuilders "will continue to train its own staff".

But Mr Adrian Parsons, one of the three Charity Commissioners, said they were very much hoping that the training company would continue to provide training on a large scale for outsiders, whatever arrangements British Shipbuilders made.

He said: "It is not a question of what British Shipbuilders wants to do. A company cannot set up a charity to train its own employees: they were only able to obtain the advantages of charitable status by taking on the responsibilities of providing training more generally, and they cannot now overrule the trustees' responsibility for carrying out that objective."

Mr Colin Douglas, the training company's northern region director, and its senior executive since the death last year of its managing director, said: "We don't see why we should go down with the sinking ship of British Shipbuilders. We would be better off without their training work, because we could use the capacity to take on more work from overseas. We have just tendered for a Saudi contract worth £50m over five years."

The situation is embarrassing to the Government, which has spurred British Shipbuilders to contract its operations, but also strongly favours independent training organizations like the British Shipbuilders company which it is counting on to replace the abolished statutory training boards.

### HMI figures defended

An accusation that Her Majesty's Inspectors of Schools included inaccurate figures in their report on a Hereford and Worcester comprehensive school has been contradicted by the headmaster.

In a letter to *The TES* today (see page 10), the county's education chairman, Dr David Mallett, says that the report on Tenbury High School, in Tenbury Wells, identified by its report number, was an incorrect caption allowance of £7,500 for 1983-84. He says it should have been £11,216.

Mr Michael Clark, head teacher, said that the caption figures were a matter of interpretation. He had seen the inspectors' figures they had used – and he was concerned they had not been written in Dr Mallett's report.

### 'Bring back grammars'

by Virginia Makins

A new survey of attitudes to education shows that just over half of a national sample of parents of school-age children favour bringing back grammar schools, and believe in corporal punishment in both primary and secondary schools.

The telephone poll, conducted by Audience Selection for Thomson Regional Newspapers, showed that 32 per cent of parents with children in secondary schools thought that the comprehensive system had improved standards – but 48 per cent said it had caused a decline.

Only 36 per cent of parents thought science a very important subject, compared with 93 per cent for English, 90



Democratic candidate Walter Mondale's trouncing at the polls was repeated at mock elections held by American schools in Britain.

But at the main American School in London, where pupils come from families in senior management or the diplomatic corps, the Democrats scored slightly better with 37 per cent of the vote – while nearly 10 per cent of pupils voted for "others".

Ronald Reagan scooped only 52 per cent of the vote.

The main issue – influenced by British politics – turned out to be disarmament. But at the main American School in London, where pupils come from families in concerned with defence came out overwhelmingly for the Republicans, giving Reagan 74 votes and Mondale only six.



Mr. Michael Peck, the member of the English department who sent it in, took little personal credit. "I merely acted as collector," he said modestly, "and made the final decision on three clues."

There were one or two tricky decisions to be made, according to the crossword's compiler, Mr. Roger Squires. Could the answer to 65 down – "Greek letter, reading it one gives audible sigh" – be either "psi" or "pi", for instance? No, he decided, it had to be "psi" since the important thing was how the word sounded and "psi" sounds like "fie", which expresses annoyance.

But he had to be more lenient with Scottish entries which had given "tam-tam" as the solution to 62 down – "He may get beaten if he appears again". The Sassenach answer, of course, was "tam-tam" but, since "tam" is both Scottish for "tom" and a kind of gong, he had to accept either.

Nothing could be done, however, to turn the entry from Berkhamstead School in Hertfordshire into a prize-winner. It was completely blank.

## OU complaint supported

The Government-appointed visiting committee to the Open University is to tell Sir Keith Joseph, the Secretary of State for Education, that he has been too harsh in the treatment of the university's grant over the next three years, *Felicity Jones writes*.

The OU has consistently maintained that the grant levels proposed would lead to a £15.2m shortfall in its resources by 1986. That sum has never been accepted by the Department of Education and Science but it now recognizes how the figure was reached.

The full draft of the visiting committee's report is not completely favourable to the OU's cause. The committee has not accepted the argument for student fee differentials which would help maintain enrolments in poorer parts of the country like Northern Ireland and Yorkshire.

The committee is nevertheless sympathetic and accepts that the OU would have a serious problem if the new grant levels were imposed. *THES*.

### £80m on borders

The Government is spending nearly £80m this year on boarding school education for the children of service-men and officials posted abroad, the Prime Minister told MPs last week.

She said in a written Parliamentary answer that £71m was going towards boarding school allowances for 18,700 children of members of the armed forces in order to provide continuity of education.

### Muslim move

Muslim children in Sheffield are to be given meat from ritually slaughtered animals in a school meals experiment. The city education authority and local Muslim leaders hope to avoid the sort of controversy that arose when a similar scheme was launched in Bradford.

**PETROL**

0 1/2

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## Drowning their sorrows

by Biddy Passmore

"It took our minds off the reorganization for a week or so," said Mr Martin Marsh of Salesian College about solving this year's Collins/TES crossword (see page 9 for correct solution).

Now something is on its way to Salesian, an all-boys' RC comprehensive in South London, that will provide an even better distraction from the impending loss of its sixth form – a case of sherry for the staffroom, won in a draw of all the prize-winning schools. "Isn't that wonderful?" said Mr Marsh.

More than 1,000 entries were received for this year's crossword and the first 51 all-correct solutions won prizes totalling more than £3,000.

One out of the bag was from Whitland Grammar School in Dyfed, "one of the last two grammar schools in Wales", Mr John Arfon Jones, the assistant maths master, said proudly. Unlike Salesian's entry, which was very much a joint effort, Whitland's was almost a solo performance by Mr Arfon Jones, with a little help here and there from a retired colleague, Mr Geraint Griffiths.

A strictly cooperative approach was taken by Rushy Mead, a large 11-16 comprehensive in Leicester which sent in the second all-correct entry opened.

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# Standing up for 'patchiness'

Ten years on, it is instructive to re-read the 14 column feet which *The Times Educational Supplement* (March 1, 1974) devoted to the destruction of the Association of Education Committees.

The main article gives a balanced account of the political judgments and the reactions. The headline writer had no doubts: "The moves to muffle the voice of education in local government." And the last words went, appropriately enough, to Lord Alexander, then secretary of the AEC:

**Bob Morris analyses the centralist threat to education, and considers how best the local authorities can resist it.**

"A nation can do without local government, but it can't do without education," he said, echoing the words of his oral evidence to the Redcliffe-Maud Commission. And he prophesied, not without a hint of malice, that the way the local government associations are going at the moment, further and higher education will be out of local government within the next five years. In which case the rest of education would not be slow in following."

As the metropolitan local education authorities gather for their tenth annual meeting, no special celebration is planned over a prophecy unfulfilled. A new local government reorganization is before the legislature. Education is involved principally in the plans to reconstitute England's largest i.e.a., though the proposals are no longer as dramatic or damaging as they were first formulated.

The biggest threat to education, however, lies in changes already made or at least in laws already on the statute book. The whole apparatus of the Local Government Finance Act 1982 is designed, as the local authority associations have warned, to bring about greater central control and a reduction in the scope of local discretion. The Rates Act 1984 will further restrict discretion, enforce sharp reductions in levels of expenditure in some authorities, and have longer-term effects on the quality of local democracy, the aspirations of the elected member, and the effectiveness of local services. Already, the grant-related expenditure assessment is being used for purposes which its proposers vowed were not intended: in the Department of Education and Science paper this autumn, on schoolteacher numbers, "modest" changes in i.e.a. practices, bringing the actual pupil:teacher ratio closer to the "assessed PTR" implied by the GREA, are calculated to make about 2,500 teachers nationally "available for redistribution".

The non-prescriptive formulae of the block grant are already being applied, in value-for-money studies, to highlight disparities in i.e.a. expenditure. In most cases with more than an implication that it must be the higher spenders who are out of it.

How appropriate that this is happening in 1984. Those of us who thought that the buzz-word of the year might be "doubleplusgood" were wrong, though "patchy" has had far greater

## Why they've tried to kill the AEC

The battle over who shall speak for education after local government is a fight for survival.

At stake in the short term is the survival of the 70-year old Association of Education Committees, until now the national voice of those who operate the maintained schools throughout the country. With its back to the wall, the AEC believes that its voice is needed, not only to speak out effectively and authoritatively for education.

To allocate the separate voice of the education committees are the most councils—the education authorities. Inevitably, if the direct institutions of the AEC proved true, and education did come out of local government, there would be no need for the AEC. The AEC's survival depends on the fact that it is not a local government association, but a national association of local government associations.

The new local education authorities have been set up by the Local Government Finance Act 1982. The AEC's survival depends on the fact that it is not a local government association, but a national association of local government associations.

For the past 10 months, the AEC has been working to ensure its survival. The AEC's survival depends on the fact that it is not a local government association, but a national association of local government associations.

From the front page of *The TES*, March 1, 1974.

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Lord Alexander... prophecy unfulfilled? Or just late.



**A TES investigation into the power politics behind the moves to muffle the voice of education in local government**

Through the figures was disguised, the AEC now claims a membership of around 40 out of a total of 143 education committees under the new local government structure. (See page 25.) By April, however, the AEC's membership will have grown to 100, as the new local government structure is implemented.

The outside attacks have come not only from those leading forces in local government, but from the AEC's own ranks. The AEC's survival depends on the fact that it is not a local government association, but a national association of local government associations.

From the front page of *The TES*, March 1, 1974.

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NEWS

## Whitehall draws fire over multicultural response

by Diane Spencer

An international group of educationists is concerned about the British Government's rejection of a Council of Europe recommendation on training teachers for multicultural society.

At the forty-sixth session of the council in Strasbourg, the British delegation put forward a "reservation" on these proposals because it claimed that they were mainly relevant to migrant workers temporarily resident in the host country, and that the decentralised nature of Britain's education system would make many of the proposals difficult to implement.

The council's recommendations include that governments should: make the intercultural dimension a feature of teacher training; help teachers to be more aware of the economic, social, political and cultural

## CNAA gives approval in principle to AS levels

by Biddy Passmore

The body which validates degrees in polytechnics and colleges has lent much-needed support to the Government's proposals for an AS level to broaden the sixth-form curriculum.

The Council for National Academic Awards (CNAA) says it "warmly welcomes the proposals" and is prepared in principle to modify the entrance regulations for its degrees to accommodate the new award.

While the council wants to keep two levels, as the "benchmark" for normal minimum entry requirements, it believes this intellectual standard could also be shown by a combination of 'A' and 'AS' levels, or of 'AS' levels alone.

## Low coal stocks hit classes

by Richard Garner

Children in two local education authorities were being sent home from school this week as a result of a shortage of fuel supplies because of the tight coal-miners' strike.

In addition, secondary schools in Dorset — which were shut for three days last week — were warned they could face closure again soon despite a temporary reprieve this week.

In Mid-Glamorgan, where the Labour-controlled county council is giving priority to secondary children taking examinations, primary children were being sent home early this week. The authority has hired gas heaters for the classrooms. But following warnings from the National Union of Teachers about safety hazards the heaters are only operating when the pupils are in the school.

## Strikers a disgrace — girls' school head

by Bert Lodge

A withering attack on the disruptive tactics of teacher unions in support of their pay claims was made at the annual conference of girls' public school heads this week.

Miss Freda Kellett, head of Birkenhead High School, in her presidential address to the Girls' Schools Association at Eastbourne, declared: "It is entirely catastrophic, unprofessional and a negation of all the principles that we as teachers stand for, to resort to strikes."

"Shame on all those who walk out of their schools. They are a disgrace to the profession!" She asked how such teachers could possibly expect high standards of behaviour from their pupils when setting such low standards themselves. "Surely we should be teaching our young people to deplore the 'bully boy' tactics of which we have seen so much in this country in the summer of 1984."



Sending a letter... pupils at Garth Hill School in Berkshire using The Times Network for Schools.

The education world now has a central database. Virginia Makins reports.

## Electronic mail network launched for schools

An electronic network for schools, launched this week, will allow pupils, teachers and local education authorities to send messages, documents and gain quick access to a wide range of information useful for learning, teaching and administration.

The Times Network for Schools has been designed for the computers now in schools, and will provide electronic mail services at a much lower cost than any commercial system so far.

It was launched by Times Network Systems, a new subsidiary of News International, the holding group for the Times Newspapers, publisher of *The Times* and *The TES*.

The TES is joining the scheme and will be announcing details of how readers, contributors and local authorities can use its mailbox and notebook.

The network was demonstrated this week at Garth Hill Comprehensive School, Bracknell, Berkshire. Mr Stanley Goodchild, the school's head, said that the network had enormous potential, both as an information and communication system in its own right, and as a way of introducing pupils and teachers to important applications of information technology.

The new system is based on British Telecom's Telexnet. Gold electronic mail system, but will have its own central database. All the local authorities that have seen the system have

been enthusiastic, not least because it will be possible to use it locally to communicate with their own schools, and distribute rapidly both information and software.

Provided the network works well in practice they believe that it will provide an invaluable tool for pupils, teachers and administrators. The system is being partly subsidised by industrial sponsors, and the company has been able to negotiate discounts for equipment and for the use of the Packet Switching Service, which greatly reduces the telephone costs of electronic mail.

The hardware and software needed to join the network will cost schools £152, and there will be a charge of £69 each term (£52 in Scotland) which will cover unlimited access to the system. Equipment is available for BBC and Research Machines micros, and can be developed for other machines if there is a demand.

An important feature of the system is that messages and data to be sent down the system can be prepared "off line", then transmitted in an instant. Similarly, the recipient can put the data straight on to a disc, and read back off line. This greatly reduces both telephone costs, and the traffic load on the network.

Although there will be information about educational resources on the network, the company says that it will

## Private Bill aims to cut secrecy

Parents will have the right to see their children's school records if a Bill published this week becomes law.

The Bill, published by Mr Chris Smith, the Labour MP for Islington South, has been drafted by a team of lawyers working for the Campaign for Freedom of Information, and is called the Access to Personal Files Bill. It may now be introduced in the Commons as a Private Members Bill.

The campaign said this week that it accepted the need for some confidentiality. People should normally see only information about themselves. However, it added: "Doctors, teachers, social workers and others working in related professions increasingly acknowledge that only by sharing information and responsibility with the people they exist to help can they do their job effectively."

The British Accreditation Council for Independent Further and Higher Education, launched this week by its president, Lady Plowden, replaces a scheme previously operated by the Department of Education and Science until April 1982.

Lady Plowden said the BACIFHE would monitor standards in "a most rigorous system of accreditation" devised by a team of 40 inspectors including retired HMIs, local authority advisers, heads and senior staff of polytechnics and colleges and members of professional bodies.

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## Mike Durham reports on Conservative concern that the party may lose control of the ACC

# Tories fear vote loss over HMI reports

Conservative fears that critical HMI reports may lose the Tories votes in the forthcoming local elections are believed to underlie some of the recent attacks on the annual HMI spending surveys.

A leading Conservative education adviser, Mr Stuart Sexton, has confirmed to *The TES* that Conservative leaders in many shire counties are worried that the HMI surveys may be used as political ammunition against them.

According to other sources, Tory party organizers are concerned that the Conservatives could be heavily defeated in several shire counties next spring, leading to the loss of overall control of the Association of County Councils.

The Conservatives may lose overall control of Warwickshire, and crucial seats in "hung" councils including Bedfordshire, Gloucestershire, Northamptonshire, Berkshire, Lincolnshire and Cheshire.

But Mr Sexton again denied that criticism of HMI by Tory education chairmen was a party political assault on HMI's independence. He claimed that the reports could be used by either political party.

The local elections next May will be the first opportunity for four years for voters in the 47 county councils of England and Wales to deliver a verdict on the quality of their local government.

Spending on local services, of which education is by far the biggest in the shire counties, is widely expected to be a crucial issue in the election campaign.

paigns, with opposition parties mounting bitter attacks on Government-inspired cuts.

According to well-placed sources, the HMI expenditure surveys, which have frequently criticized local authorities for low levels of spending, have proved a deep political embarrassment to Conservative leaders in the shire counties.

In 1982 HMIs listed three Conservative shire counties—Norfolk, Wiltshire and Somerset—among the four local authorities giving most cause for concern for low spending on education.

Last year all four lowest-spending councils were Tory shires—Norfolk, Wiltshire, Somerset, and Hereford and Worcester. The Inspectorate has also criticized Oxfordshire's pupil-teacher ratios and poor textbook provision.

This week, as reported below, an HMI report on Norfolk was published criticizing the authority's school book provision and maintenance of schools.

Although none of those authorities is likely to change hands in May, the controversy surrounding published HMI reports on the education is thought certain to be exploited in the run-up to the elections.

An HMI report on Northamptonshire, a crucial "hung" county, is expected to be published before the elections. And unless the publication is postponed, the next annual HMI expenditure survey should be ready in April, only a matter of days before the elections on May 2.

A change in political control in five or six Conservative-run counties would be of particular significance.

The loss could be enough to switch control of the ACC to Labour or to a position of no overall control.

The Government would then face outspoken criticism of its policies on local government from both leading associations—the ACC as well as the Labour-controlled Association of Metropolitan Authorities.

For the change to take place, Labour-controlled Avon and Derbyshire, both of which left the association, would have to return to the fold.

A spokesman for the ACC said there was "a very distinct possibility" of the association changing hands if the Government's new block grant allocations forced rates up in the counties before the election.

The most likely Conservative counties to change hands are Warwickshire, where the Conservatives are kept in control by the casting vote of the chairman, and Bedfordshire, where the Liberals hold the balance of power.

In Gloucestershire the Conservatives are kept in power with the support of seven independents, giving them a majority of six over other parties.

In the traditionally Conservative county areas, the threat perceived by Conservative politicians is that of a Liberal or SDP protest vote, rather than a move to Labour.

The junior education minister, Mr Bob Dunn, is understood to have asked for a statement on education policy to be prepared for circulation to "at risk" counties, which will be incorporated into local election manifestos.

Mr Sexton, a special adviser at the Department of Education, denied that the Conservatives were expecting to lose counties in May, but said the HMI report on local expenditure were politically charged.

"I would not say there is concern that the counties will change hands, but there is concern that HMI reports will be used politically in the run-up to the elections", he said.

"The fear is that where Tory authorities have been subjected to HMI reports, the Government is gratuitously giving fuel to the opposition in May. The same could be said of Labour authorities. It could be argued that the Tories in Haringey could use the HMI report there as a political weapon."

Mr Sexton said the Inspectorate's work should be researched, written and presented in a way that was not politically useful. At present, he said, the expenditure surveys provided an opportunity for opposition parties to "quote the Government" at Conservative council leaders — "conveniently forgetting that HMI is, in fact, independent."

He said: "We know HMI is independent. But you tell that to the man in the street, or the Liberals in Hereford and Worcester." Mr Sexton denied wishing to attack the Inspectorate's independence, but wanted to reconsider the criteria by which they worked to make a link between spending and education quality.

Professor Ted Wrang, head of the department of education at Exeter University, who has alleged that HMIs' independence is under political attack, said: "It is certain that some Conservative policies might see them off in May. Those with the foresight to look ahead realize that any negative HMI report could do them a lot of harm."

Professor Wrang said he believed the Inspectorate was worried about whether it would be allowed to win an objective expenditure survey for publication next year in the light of the controversy surrounding it.

"Had this been a piddling little matter buried deep in their reports, it would have been different," said Professor Wrang. "But the effects of the spending are now a persistent feature of their reports and the reason for that is that it's true."

"You only have to go into a school where the paint is peeling off the walls and the children are three or four to a book to understand what they are talking about."



Professor Ted Wrang... "affected by spending a persistent feature?"

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## Biddy Passmore and Richard Garner on the background to resumed talks on pay restructuring

# Threat may hold up assessment

Threats to legislate for the compulsory assessment of teachers may hold up agreement on that issue as part of salary restructuring talks.

The threat made last week by Sir Keith Joseph, the Education Secretary, in his letters to the unions and employers reflects his growing impatience that today, seven years after Mrs Shirley Williams' Green Paper and 18 months after his own White Paper called for the systematic assessment of every teacher, no progress has been made.

Two pilot projects on teacher assessment, in Birmingham and Suffolk, are being set up by union opposition. The salary restructuring talks, which Sir Keith hoped would produce agreement on assessment, merit money and the sacking of incompetents, broke down in July when the teachers refused to discuss the linking of pay to performance.

Those talks resume next week. But the timing and manner of Sir Keith's initiative, presumably intended to drag the two sides into agreement, may well have the opposite effect. The unions have reacted with predictable hostility to the threat—especially to Sir Keith's emphasis on weeding out incompetents. A spokesman for the Association of County Councils made it plain to *The TES* this week that they would have preferred to negotiate a package on assessment and job description first—and talked about merit money and dismissing incompetents later.

But Sir Keith's letters, to the management and the unions, make it clear he wants the question of incompetent teachers tackled head on.

And, although the letters do not mention merit money he wants that issue tackled too. It is certainly a view widely held in Whitehall that, unless the Education Secretary can offer a deal that makes a clear link between pay and performance, he will get no extra money to pay for it.

Locally, the threat of legislation on teacher assessment provided the

"The establishment of standard procedures for the assessment of teachers' performance, for advice and, where necessary, warning to teachers whose performance is considered unsatisfactory, and for all the other steps required by employment legislation, or judged necessary as part of a fair procedure for considering dismissal of staff, are matters which unquestionably call for the most extensive consultation with the teachers' associations".

From Mrs Shirley Williams' Green Paper, *Education in Schools*, which took the first faltering steps into the minefield of teacher assessment in July 1977.

only note of discord at the first meeting of the Burnham Committee to discuss next year's pay claim.

Union leaders said the announcement, contained in a letter they received on the morning of the meeting, could imperil the salary restructuring talks which are due to resume after three months of inactivity next week.

In the letter, Sir Keith told the teachers: "Arrangements for the regular appraisal of the performance of all teachers would be welcome to me and could be achieved as one outcome from the joint structure working party."

He went on to say that one way of achieving this could be "an addition to the existing regulations which would require local education authorities periodically to appraise the performance of their teachers".

"The regulations might also require local education authorities to take account of the outcome of appraisals in

managing their teacher forces, and possibly prohibit the continued employment as teachers of individuals assessed as unsatisfactory."

Sir Keith concluded his letter by asking for comments by the end of November, adding: "There would be a need for legislation before such regulations could be promulgated."

Mr Philip Merridale, leader of the management side in pay negotiations, put a soothing interpretation on the letters. It was an attempt to "nudge" the local authorities and say to them: "Look here, chaps, we haven't got it right."

But the immediate reaction from the unions was hostile. Mr Doug McAvoy, deputy general secretary of the National Union of Teachers said the NUT was disappointed that Sir Keith had timed his letter so badly.

He gave a warning that its release would mean the NUT would be unlikely to cooperate with attempts to get

pilot appraisal schemes in Suffolk and Birmingham—announced by the Department of Education and Science during the summer recess—off the ground.

At present, both the NUT and the National Association of Schoolmasters/Union of Women Teachers are refusing to cooperate with the schemes, but a breakthrough had appeared likely in Suffolk.

Mr McAvoy emphasized that the union was not opposed to the concept of assessment but condemned the link with dismissing unsatisfactory teachers. There were already proper procedures for that, he said.

"If it's true there are incompetent teachers in large numbers, then the 104 local education authorities are guilty of being negligent in their duties."

Mr Fred Smithies, general secretary of the NASUWT, said: "The unilateral imposition by the Secretary of State of a new system for assessing teachers using his statutory powers would provoke an angry reaction from the teaching profession at the best of times."

"Given teachers' parlous financial position, the reaction would be even stronger. No system could operate without the support of teachers."

The teachers are seeking agreement on a new single salary scale for the profession, ranging from £7,250 at the minimum to £15,250 by 14 annual increments. Responsibility allowances would push the maximum up to

£17,650, while the highest paid head-teachers would receive £29,000 a year.

The teachers acknowledge it may be impossible to achieve this in a single year and, as a first step, are asking for a rise of at least £1,200 for every teacher.

Mr Merridale said there was "a major resource implication" in the teachers' claim. The management side was working hard on a set of proposals it would put before the resumed structure talks next week.

The National Association of Head Teachers, which is presenting its own separate pay claim this year, failed to get a hearing at last Thursday's meeting.

Meanwhile, negotiations on the cost-of-living allowances for more than 100,000 teachers living in and around London have moved a step nearer agreement. Teachers' leaders have accepted a 5.1 per cent increase in the allowances for both the 45,000 inner London teachers and the 32,000 working in outer London. The decision means the allowances are now £1,037 and £678 a year respectively — back-dated to April.

The management has said it will make an offer to those living in the Home Counties — currently receiving £258 a year — at the next committee meeting. The PAT's application for an interim injunction against next Thursday's resumed talks unless the PAT is represented at them will be heard at the High Court in London on Monday or Tuesday.

## Williams backs new deal

Mrs Shirley Williams, a former Labour Education Secretary and now president of the Social Democratic Party, added her voice at the weekend to calls for a new deal on pay and conditions for teachers.

Speaking at Swavesey Village College in Cambridgeshire, she said teachers should accept a new professional description. This should include a commitment, to be spelt out in a

contract with the local education authority, to an agreed requirement for in-service training and out-of-school study.

"The teacher's professional competence would be assessed periodically within the school, but would be moderated by outside assessors", she continued. "Teaching associations could themselves be involved in agreeing on the definition of standards."

## Jane Pickard looks at the Inspectors' findings and reaction to them in a county caught in a 'vicious circle' of underspending

# Sixth-formers had to raise funds for their carpet

Pupils at a Norfolk school had to help to raise £500 to carpet their own sixth-form centre, according to this week's report on the county by Her Majesty's Inspectors.

That is one example in a mass of anecdotal evidence given in the report to illustrate the county's problems of shortages in books, equipment and ancillary staff.

The report, previewed by *The TES* last week, paints a picture of a serious lack of resources, resulting in poor maintenance of buildings and shortages which are having a detrimental effect on work.

And it gives a warning that unless something is done to remedy the situation, there is likely to be a "further narrowing of the curriculum".

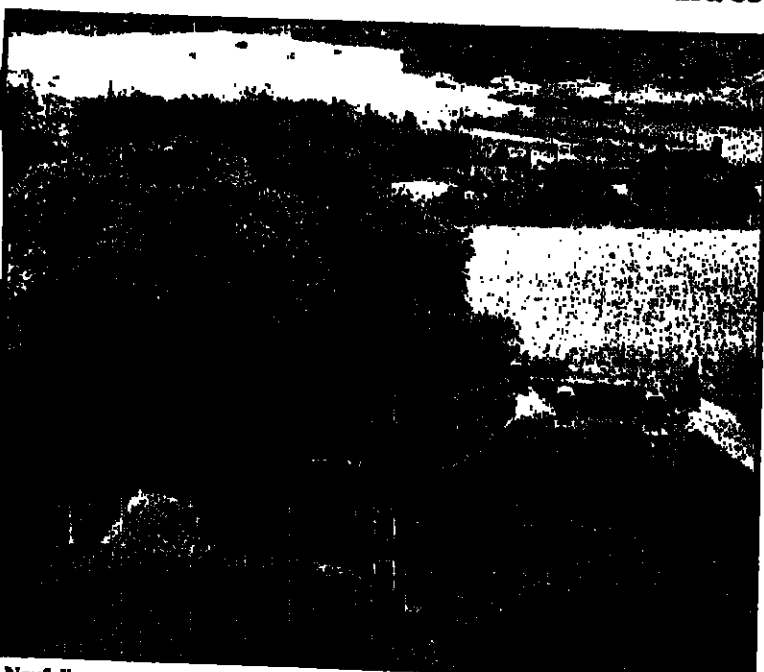
Inspectors say that officers, advisers and teachers are all operating in a system which has no slack, is already over-stretched, and shows signs of inadequate staffing and materials.

The report concludes that the authority will need to review its policies for education as a whole, including its financial provision and the priority which should be given to educational needs compared with other services.

On resources, it says: "There are clear signs the tightness of budgeting has already reached the limits of provision commensurate with maintaining an acceptable quality of work". Some schools were able to maintain adequate levels only by dint of voluntary help from parents and occasionally from teachers.

At nursery level, children aged four were being admitted to primary classes but without appropriate provision of teaching expertise, accommodation, equipment and materials.

At primary level, there were big differences between schools, which were likely to be widened by dependence on "external subsidies". In five schools visited in one area, parental contributions to books and equipment were equivalent to between 20 per cent and 75 per cent of the school's capital



Norfolk... a scattered rural community creates problems for the provision of education services.

tion allowance.

In music, provision varied from two choirs, a large orchestra, a string orchestra and various recorder and other instrumental ensembles in one middle school, to a collection of untuned percussion instruments in a single, small cardboard box in a small rural primary.

In secondary schools, the nature of the work done by children was often limited by a shortage of appropriate textbooks. All schools visited were likely to have them were those in years one to three and those of lower ability.

It was common for teachers to issue books for a lesson or a particular homework assignment, and collect them afterwards.

All the schools had to supplement their permanent building with mobile classrooms. At a "very poorly decorated school", pupils and parents had raised £500 to carpet and decorate the sixth form centre.

Inspectors also found the advisory service severely stretched. They said it was probably one of the most thinly spread in England, with one adviser in post to every 130 square miles, giving each adviser about 33 schools compared with a national average of 14.5. That in turn had an adverse effect on in-service training, which itself was

uneven and often reflected the presence or absence of a teachers' centre.

But Inspectors acknowledge that Norfolk has a geographical problem, with a scattered rural population and a large number of small schools in old buildings. Of its 458 primary schools, 152 had fewer than 60 pupils on roll and 218 had outside lavatories.

Inspectors say that the pupil-teacher ratio may appear favourable, but some primary schools were so small, with fewer than 30 pupils, that they were not able to provide a broad curriculum.

The report does say, on the positive side, that pupils behaved well in all the schools visited and work was sound with some enterprising examples of curriculum development in secondary schools.

Examination results were in line with the national average and the fifth year results in schools inspected were encouraging.

The report was based on inspections of six secondary schools and 10 primaries, supplemented by sample surveys of 26 primary schools in four parts of the county last year and this year.

The report is available from the Department of Education and Science, 100, Whitehall, London SW1A 2BQ. It is also available from the Norfolk Education Centre, 11, The Quadrant, Norwich NR1 1JH.

## Norfolk seeks extra money from Jenkins

An all-party appeal for Norfolk County Council to be given special concessions on spending will be put to Mr Patrick Jenkins, the Environment Secretary, following this week's highly critical HMI report on the county.

Councillors will urge Mr Jenkins to raise spending targets to help finance more books and equipment, carry out a closure programme for village schools, and rationalise sixth forms.

They may be joined by the National Union of Teachers, which is pressing for a joint delegation to the Environment Secretary and is likely, at the least, to seek its own meeting with him.

The report disclosed shortage of books, equipment and ancillary staff so bad that it predicted a "further narrowing of the curriculum". But it welcomed by the county's education chairman, Mrs Gillian Shephard.

She said the report seemed balanced and had come at just the right time. She particularly welcomed its comment that Norfolk had difficulties because of its large number of small schools.

Last year the county had adopted a policy of closing more small schools and concentrating children on fewer, better resourced sites.

It was also embarking on a review of sixth forms, which suffered from a similar problem of uneconomic size.

She was clearly pleased to get the backing of HMI against parental pressure which has fought fiercely for the retention of small village schools.

But the report is also going to be used as an extra weapon in the tussle for more money from the Department of the Environment.

The council argues that it has special problems because of the small schools, the distances children have to travel, and the consequent burden on the transport budget.

Mrs Shephard said transport was 40 per cent above the national average and the council had more small schools than any other authority.

But she disputed the HMI's conclusion that the county should review the priority given to education against other services.

She said all services were suffering

The county had a historic problem because it had many small businesses and elderly people, and had never been able to levy a high rate. But it had been left, after all its savings and attempts to economize, with a slightly unfair target for next year.

"For various technical reasons, Norfolk missed out on the money for lower spenders. A lot of the money spent last year was in special funds, so it was not used in the sums for setting targets", she said.

Mrs Shephard agreed that the council was caught in a vicious circle of low spending. But she said it had already held one discussion with the Department of the Environment, which has seemed sympathetic.

A spokesman for the department said that a number of authorities were pleading for adjustments in the formula for setting targets next year, and all appeals were being considered.

Opposition parties in Norfolk support the approach to the department, but urge that more money should be spent from balances and special funds.

Mr Walter Roy, the National Union of Teachers' executive member for East Angles and chair of the union's education committee, said the HMI report confirmed what the NUT had been saying for many years.

The unions wanted a joint approach by teachers' unions and the council to Mr Jenkins and to Sir Keith Joseph, the Education Secretary.

He said the council had not given enough priority to education. He said the council had not been redecorated for 10 years; much of the furniture was 25 years old and ancillary staff had been reduced by 25 per cent in the last five years in an expanding school which already had 1,800 pupils. A recent HMI report on the school had estimated it would cost £30,000 to replace equipment.

Mrs Shephard defended the Inspectorate from recent criticism. She said: "I think people don't like them because they say things which people don't want to hear."

"I feel very strongly they should be criticized."

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## Dispiriting air of neglect criticized

A Bristol comprehensive, Mangotsfield School, with graffiti on the walls, defaced and damaged desks and littered grounds, gave an air of neglect, according to HMI inspectors.

The report says relationships between teachers and pupils tended to be formal and businesslike. Classes were orderly and pupils generally committed to their work.

Levels of expectation by teachers were generally appropriate to the average pupil. There were considerable strengths in subject departments but the work often lacked excitement. The pastoral system was seen as carefully devised and developing.

The buildings, however, were seen to need urgent redecoration. The inspectors thought much could be done in the short term to improve the environment and pupils' attitudes to it.

Both buildings and grounds gave the impression of "long neglect". Temporary buildings, which formed about one-third of the total accommodation, were neglected and damaged and even new huts already bore graffiti.

The standard of cleaning left much

to be desired. Many toilets lacked soap, towels and toilet paper, and littered the grounds.

The inspectors say: "Within the classrooms, with some commendable exceptions, conditions are dispiriting. In most rooms the desks are ill-assorted, old, damaged and defaced and they are rarely arranged in an orderly and suitable way for lessons."

Displays of pupils' work were infrequent, and there was little attempt to create an intellectually and aesthetically stimulating environment. In contrast, some areas, such as the library, had worked hard to create a pleasant working atmosphere.

Standards of work at Holy Trinity Church of England primary school, Southport, are very uneven, say inspectors.

Although there were good examples of work, standards in general needed to be improved across the curriculum and throughout the age range.

However, staff worked conscientiously and were anxious to achieve better standards for all the children.

## HMI reports

HMI reports are available free of charge from the Department of Education and Science, Publications Dispatch Centre, Honey Pot Lane, Stanmore, Middlesex HA7 1AZ. Also available from I.e.a.s.

## Support on poly research

A report on science research affecting undergraduates at polytechnics concludes that the present levels of research should be maintained and in some cases enhanced.

Inspectors warn that the amount of research could not be reduced "without damage to the undergraduate experience".

But the report, which was compiled after special visits to most polytechnics last year, adds that specific applications to real problems in industry are introduced largely by way of illustration.

It says polytechnics should place more emphasis on areas of research that embrace fundamental issues, can also be applied readily to industrial problems - for example, biotechnology or solid state work in physics.

The Inspectorate also says that for research activities to be "national" and higher standards may place strain upon staff, will tend to reduce the time available for research during term time.

## Complaint notice issued

A Muslim girls school in Batley, West Yorkshire has been ordered to put right a number of "serious deficiencies" found during a three-day visit by inspectors.

The Zakariyah Girls' High School, opened in 1982 but the Batley Muslim Parents' Association, was housed in a Victorian terraced house and catered for 39 girls aged from 12 to 16. It has since moved to new premises.

During the inspectors' visit they found a hole in the floorboards of an upper floor classroom, no specialist accommodation, inadequately lit and

heated classrooms and a "rather depressing environment".

Apart from a few cupboards and benches at which pupils knelt to work, the rooms were bare. A fire escape door leading from toilets to the yard was locked and throughout the inspection no key was seen.

Inspectors reported that supplies of textbooks, equipment and other resources were low and the school had no library.

Although the school was poorly resourced and teaching seriously

affected as a result, the children were well behaved and relationships were "pleasant and cordial".

However, the school was offering learning experience "intellectually challenging and aesthetically limited". Teacher expectation and standards of achievement were low and learning pace.

Sir Keith Joseph, the Education Secretary, has now issued a notice of complaint under Section 71 of the Education Act, requiring the school proprietors to remedy the problems.

## Grammars gain exams parity with independents

by Biddy Passmore

The pupils at England's 175 remaining grammar schools achieved results as good as those at independent schools last year, according to new statistics from the DES.

More than three-quarters of the leavers from both types of school had passed either five O levels with higher grades or at least one A level. Less than a quarter of comprehensive school-leavers had achieved comparable success.

Overall, the proportion of pupils leaving school with no graded result, that is, a CSE grade 5 or better, fell to 9.6 per cent in 1982-83. This is the first time the figure has dropped below 10 per cent and means that the share of leavers with no graded result has been reduced by more than three quarters since the raising of the school-leaving age in 1971-72.

There have also been encouraging increases since the early 1970s in the share of pupils leaving with at least one higher grade pass at O level/CSE (O level grades A-C or CSE grade 1). Nearly a fifth more of the boys and nearly a third more of the girls reached this level last year than in 1971-72, with rises of more than 100 per cent in the proportions of girls passing physics and chemistry.

Progress at A level has been slower. The number of leavers with two or more A level passes as a proportion of all 17-year-olds rose very slightly last year, to 13.4 per cent - but that is an improvement of only just over one percentage point since 1971-72.

There were 765,000 leavers in 1982-83, 14,400 more than in the previous year. The biggest proportionate increase was in leavers from the first year

sixth and above, reflecting recent increases in the numbers staying on at 16.

That trend towards staying on went into reverse last year, however, when the proportion of pupils leaving at 16 rose by 1½ percentage points, to 67.4 per cent of the age group.

The share of both boy and girl leavers planning to go straight on to some form of full-time further education also fell for the first time in recent years. The proportion of girls who wanted to carry on studying remained 9 percentage points above that for boys, at nearly 32 per cent - but fewer were going on to degree courses.

Just over 17 per cent of last year's school leavers had obtained at least one A level pass and a further 10 per cent had got at least five higher grade O levels or CSE grade 1s.

But the differences between types of school were large. While 13.7 per cent of comprehensive school leavers got at least one A level, the figures for leavers from sixth-form colleges and grammar schools were 52 and 56.8 per cent respectively.

One quarter of all maintained school leavers planned to go on to some form of further or higher education, compared with almost two thirds of independent school-leavers. Only 5.6 per cent of the leavers from comprehensive schools planned to follow a degree course, against 28 per cent from grammar schools and a third of those from independent schools.

English School Leavers 1982-83, DES statistical bulletin 11/84, available from the Statistics Branch, Department of Education and Science.

School leavers in England  
Percentage with different levels of qualification

|                                               | 1971-72 | 1979-80 | 1980-81 | 1981-82 | 1982-83 |       |       |
|-----------------------------------------------|---------|---------|---------|---------|---------|-------|-------|
|                                               |         |         |         |         | Boys    | Girls | Total |
| Total leavers (000s)                          | 608.6   | 750.7   | 734.0   | 751.1   | 389.9   | 375.8 | 765.5 |
| Examinations attempted                        |         |         |         |         |         |       |       |
| No examination                                | 42.4    | 11.0    | 10.4    | 9.7     | 10.2    | 7.1   | 8.7   |
| CSE but not GCE                               | 14.7    | 30.9    | 30.7    | 29.5    | 29.7    | 26.9  | 28.3  |
| GCE O but not A level                         | 24.4    | 40.5    | 40.5    | 41.6    | 40.6    | 46.7  | 43.4  |
| GCE A level                                   | 18.5    | 17.5    | 18.5    | 19.3    | 18.6    | 18.2  | 18.4  |
| Total                                         | 100.0   | 100.0   | 100.0   | 100.0   | 100.0   | 100.0 | 100.0 |
| Examination achievements                      |         |         |         |         |         |       |       |
| 1 or more A levels                            | 16.2    | 15.6    | 16.5    | 17.0    | 17.4    | 18.9  | 17.1  |
| No A level passes but 5 or more higher grades | 8.4     | 9.4     | 9.6     | 10.1    | 9.2     | 11.4  | 10.3  |
| In O levels/CSE                               | 18.3    | 27.0    | 26.6    | 26.7    | 25.1    | 28.7  | 27.4  |
| 1-4 higher grades                             | 13.0    | 35.8    | 35.9    | 35.5    | 37.0    | 34.2  | 35.6  |
| 1 or more other grades                        | 57.0    | 87.8    | 88.6    | 89.4    | 88.7    | 92.1  | 90.4  |
| Total with a graded result                    | 43.0    | 12.2    | 11.4    | 10.8    | 11.3    | 7.9   | 9.6   |
| Total with no graded result                   | 100.0   | 100.0   | 100.0   | 100.0   | 100.0   | 100.0 | 100.0 |

1 For 1971-72, O level pass, CSE grade 1; from 1979-80, O level grades A-C, CSE grade 1.  
2 For 1971-72, CSE grades 2-5; from 1979-80, O level grades D-E, CSE grades 2-5.

School leavers in England, 1982-83  
Qualifications and intended destinations by type of school

|                                              | Maintained schools |         |                 |                | All schools |
|----------------------------------------------|--------------------|---------|-----------------|----------------|-------------|
|                                              | Comprehensive      | Grammar | Other secondary | All maintained |             |
| Total leavers (000s)                         | 652.1              | 21.3    | 48.4            | 721.8          | 43.7        |
| Examination achievements                     |                    |         |                 |                |             |
| At least 1 A level pass                      | 13.7               | 58.8    | 4.5             | 14.4           | 63.1        |
| No A level pass, but 5 or more higher grades | 9.8                | 21.6    | 7.7             | 10.0           | 14.6        |
| O level or CSE results                       | 28.2               | 18.2    | 30.3            | 28.0           | 16.5        |
| 1-4 higher grades                            | 38.0               | 2.8     | 46.6            | 37.5           | 4.0         |
| 1 or more other grades                       | 10.3               | 0.6     | 10.9            | 10.1           | 1.8         |
| No graded result                             | 100.0              | 100.0   | 100.0           | 100.0          | 100.0       |
| Destinations                                 |                    |         |                 |                |             |
| All full-time further education              | 24.1               | 53.9    | 24.7            | 26.0           | 64.9        |
| Degree courses                               | 6.6                | 28.0    | 1.4             | 6.0            | 32.8        |
| Teacher training courses                     | 0.3                | 1.3     | 0.2             | 0.4            | 0.5         |
| GCE A level courses                          | 2.6                | 6.4     | 2.9             | 2.9            | 10.9        |
| GCE O level courses                          | 1.7                | 0.6     | 3.1             | 1.7            | 2.2         |
| Other courses                                | 13.6               | 17.6    | 17.2            | 14.0           | 18.4        |
| Available for employment                     | 64.2               | 38.4    | 64.5            | 63.5           | 26.5        |
| Not known                                    | 11.7               | 7.7     | 10.8            | 11.5           | 9.6         |
| Total                                        | 100.0              | 100.0   | 100.0           | 100.0          | 100.0       |

1 O level grades A-C, CSE grade 1.  
2 O level grades D-E, CSE grades 2-5.  
3 Including temporary employment pending entry into full-time further education.

## PRIMARY



Learning how to play another board game: (from l. to r.) Lisa Campbell, Bennett Bazalgette and Giles Humphreys.

## Little brother (and his sister) is watching...

Children at a north London primary school are being given an opportunity to take part in their governors' discussions on new ILEA policies.

According to Mrs Ray Pinder, head of Drayton Park primary in Highbury, the presence of pupil observers aged 10 and 11 adds balance to governors' meetings and has become accepted practice at her school.

Attending evening meetings once a term is seen as part of children's education. Kevin Lyons, a former pupil whose sister Clare is currently a pupil observer, commented that it had helped him to understand how the school worked. And Bennett Bazalgette, aged 10, said it had enabled him to see his teachers in a different light. "They were talking and laughing more than they usually do!"

At the most recent meeting children heard about the anti-racist policy of the Inner London Education Authority and received copies of Drayton Park's statement on racism. (One-third of the pupils speak English as a second language.)

"I thought the statement was very

important to the school," said Bennett. In his report back to a school assembly he explained that racism was a "crime" and that the ultimate penalty for children who committed it was suspension.

It isn't on the arrangement, however, that the meeting a pupil who had studied the plans for a new nursery block pointed out that fencing between the nursery and the main playground should be much higher to stop balls flying over and hitting small children.

"This had not occurred to the architects nor to the other adults examining the plan," Mrs Pinder admitted. This suggestion was welcomed and incorporated in the plans and he was able to report this back to the school proudly next day.

At first, children were elected but this has been gradually replaced by a self-selection process.

"It's not always the most academic pupils who make the best reports," Mrs Pinder said. "Some of the most lively and memorable reporting back has come from our least conformist pupils."

## Pressure group alleges that four pupils were searched after thefts Blacks to picket infant head who called in police

by Jane Pickard

A black pressure group is calling for the sacking of an infant headmistress and plans to picket her school in protest at the way in which they say she dealt with a spate of thefts.

The picket planned for November 27 outside St Paul's and All Hallows infant school in the London borough of Haringey follows a row last March when police were called in to speak to children about the thefts.

Mr Paul Boyd, a member of the Haringey Black Pressure Group on Education, said Mrs May had four black children searched and that each child was found to have a small amount - in the region of 5p - in excess of their normal pocket money.

The four sets of parents were then asked to the school and the police were called in. At an assembly the following day, the community policeman gave a lecture to children and staff about the evils of theft, while the one mother who was able to attend sat in on the session.

Mr Boyd said she felt humiliated. He also claimed the policeman had spoken very severely to the children and told them that if they continued this behaviour, they would be "looking through bars".

Since then the group has complained to the local authority, the school governors and the Department of Education and Science. But it says official channels have proved useless and that it must now resort to community action.

Mr Boyd has accused the authorities of being in "collusion". He said Mr Bob Dunn, junior education minister, had said the incident was "unfortunate".

but that Mrs May had acted "in good faith, however unwisely".

The collective wants Mrs May to apologise for her action and is asking the I.E.A. to:

□ formulate clear guidelines on having police in schools;

□ show parents that they can get some kind of redress; and

□ look into the question of racism and apparent collusion between governors, the I.E.A. and DES.

And it warns: "The blood of the black community will be on the heads of the education institutions."

The school governors and education authority maintain, however, that the allegations do not "reflect the true nature of the situation."

It is understood that Mrs May has been criticized by the authority for her handling of the situation. But Mr Tony Lenney, director of education, said the pressure group was indulging in "student rhetoric". As he understood it, the police had not questioned any children individually.

Both governors and local authority say that they are ready at any time to meet the protesters. But a previous meeting broke up as a result of an argument. Both sides blame the other and the collective now says it sees no point in a further meeting.

A DES spokesperson said the Department was unable to intervene in the argument because it was essentially an employment matter. But it did not believe there were grounds for thinking the governors or the authority were acting in breach of race discrimination laws.

Mrs May did not wish to comment.

## Montessori first

The first Montessori training course to secure national recognition starts next week. The National Nursery Examination Board (NNEB) has validated a child care course run by the London Montessori Centre.

The two-year course will follow NNEB regulations, but will also include Montessori practice and principles. It will cost £1,600 a year - but with NNEB recognition, some students may be able to get grants.

## Closures resisted

Norfolk County Council has been accused of behaving like a feudal baron by a new pressure group campaigning to save village primary schools. The Keep our Rural Schools group claims that many closures were made during the past year after only token consultation of parents, and decisions were made on the basis of false information. Councillors feel so secure that they treat the electorate, including teachers, parents and governors, with contempt, says KORS.



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Carolyn O'Grady talks to Geoffrey Pattie, the new Minister for Information Technology

# Time to shift the hard sell from hardware to training and use

Mr Geoffrey Pattie is only the second Minister for Information Technology. Already, however, there are signs of a distinct difference in his style from that of his predecessor, Mr Kenneth Baker. Mr Baker wrote his own job description and stepped into it at the Department of Trade and Industry in 1979. Almost immediately he became one of the blue-eyed boys of education. The Department of Education and Science was being agonizingly slow in getting its Microelectronics in Education Programme off the ground, and he offered one of the most generous deals received by education: a computer for every secondary school on a 50/50 basis, plus some of the peripherals. The micros in secondary schools scheme was extended and quickly followed by the micros in primary schools scheme, and expectations rose, encouraged by the gallant Minister for Information Technology.

Local Government, and Mr Pattie came from the Ministry of Defence to oversee the next phase of the new industrial revolution: the IT revolution in which Kenneth Baker so fervently believed. Murmurings of discontent among once strong allies - information technologists in education - are only one of many problems with which Mr Pattie has to deal. Others include developments in cable TV and the British microelectronic and aerospace industries. But his department is clearly concerned about criticism from education. One clue to the DTI's second thoughts about pushing hardware into schools could be Mr Pattie's statement: "I've always felt that getting the hardware into schools, though pretty fundamental (you can't teach piano lessons without a piano) is only one aspect. There are many others almost as important, such as making sure that teacher training is as good as it should be. "It should not be assumed, for example, that the hard-pressed maths teacher has got to be the person concerned. Other teachers - arts teachers, for example, once they have overcome the natural resistance that everyone feels - can also be involved."



Geoffrey Pattie: "everybody's got the message."

It became common knowledge that a scheme for Prestel was in the pipeline: civil servants were working on a means to give schools money to buy software, and a scheme for special schools, it was implied, was definitely on the way, including the development of a pack of software which, everyone thought, would be distributed free to special schools. The MEP's Microelectronics for All pack was considered another likely candidate for DTI largesse. And then, suddenly, the money stopped coming. There were no pronouncements, but it became known that there was to be no money for software, and a scheme for special schools, was launched at the Concerned Technology Exhibition with an alarming price tag of £250. Then this summer, Mr Baker moved on to knottier problems as Minister for

they get very gloomy". The Microspecial pack, he said, was still being evaluated, along with its price; £25 was not a price that the department recognized. The micros in schools schemes in their present form had reached the ceiling (secondary schools have an average of 11 machines per school and all primary schools will have a computer by the end of this year). Information Technology Centres (ITCs), well-equipped IT training centres for young people, was another project which he felt had probably gone as far as it could in terms of numbers of centres. Mr Pattie had been particularly impressed by a visit to Peterborough's new ITEC, which, he said, was finding jobs for the majority of its intake, even before they had finished the course. But in the long run he saw ITECs not as the answer, but as a safety net for those who had left schools without the proper skills. The real job lay with the schools, who should be encouraged to think about technology, "not as a subject in its own right, but as a means to actually solving problems throughout the school". "The more we make the curriculum as relevant as we possibly can through liaison with industry, companies and other means, the better."

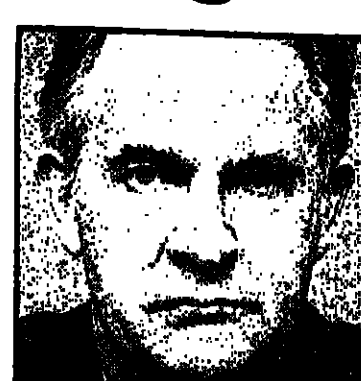
## CBI

Leaders of the Confederation of British Industry now strongly favour the two-year Youth Training Scheme which the unions and the Labour Party, and many educators, have been urging. They are to raise the matter with the Prime Minister and do not think she will need much convincing. But a resolution urging such a lengthening of the scheme split the CBI's annual conference at Eastbourne this week - partly because it seemed to be putting forward the wrong reasons. Mark Jackson reports

# Employers fall out over longer YTS



Sir James Clesminson



Sir Terence Beckett

Doubts about the value of the Youth Training Scheme appear to be growing among some employers. Most delegates to this week's CBI conference supported the official line of total commitment to the YTS. And there was a comfortable majority for a motion proposing that trainees should be able to stay on in the scheme if they could not get jobs after their first year of training. Nevertheless, a substantial minority made it clear that they did not want the scheme to be extended. Some of those who voted against the proposal objected to the idea of continuing the right to further training to the unemployed. But others appeared to be swayed by Mr Vincent Bealey, a Kent farmer whose speech echoed some of the extreme criticisms of the YTS which have been made by its opponents in the unions and in education. Mr Bealey urged the conference: "Please do not extend the YTS - the youngsters deserve better of us."

Mr Harvey Davies, of British Aerospace, said that the CBI's North Wales region, which sponsored the motion, believed that the Government must extend YTS training to provide a second and perhaps third year of training. It was even more important that the training should be biased towards industrial needs so that school-leavers could look forward to acquiring a marketable skill.

Mr Davies said that his own firm had not been very impressed by the YTS originally but had decided to experiment to improve the idea. They had trained 70 leavers alongside craft apprentices and 87 per cent of them had ended up with jobs in other industries. "It is important that the training should be identical in all aspects for both apprentices and trainees."

Mr John Pardoe, managing director of Sight and Sound, the office skills training firm, arguing against limiting any extension of the scheme to youngsters who could not find jobs, told the conference: "The YTS will be diminished if it is seen as a scheme for the unemployed alone. In West Germany training is provided because it is seen as good for industry rather than because it will massage the unemployment figures, or for some other political reasons. We have to think in the same terms."

Mr Pardoe, the former Liberal MP, claimed that if the YTS was valuable it was because it was creating skilled and motivated workers for the future. "The YTS has been an astonishing success," he insisted. Sir James Clesminson, the CBI's president, said that the various doubts expressed by the minority who had voted against the resolution would be taken into account in framing recommendations to the CBI's council. In his opening speech on Monday Sir James had said that the CBI had already demonstrated what could be achieved through the YTS and had taken the lead in making sure that teachers understood the importance of industry. The latest CBI survey had made it clear that there was increasing need for young people to come into industry equipped to adapt to modern technology. The YTS was at present seen as a one-off, but it now needed to develop into a part of the normal process of youth training, with a redefinition of apprenticeship. "I pledge that if the unions move on this we will respond. We must find a means whereby it is open to everybody, not just to receive formal education up to the age of 18, but also to find scope for skills training and technical education to that age."

## Investment shortage blamed on teachers

Teachers were blamed for the lack of investment in Britain's industry when the CBI discussed wider share ownership. A speaker accused them of passing on their own lack of enterprise to their pupils. Mr Gilbert Platon, chairman of Platon International, said that the education system was the greatest restriction on ordinary people investing in companies because teachers were not an enterprising profession. They preferred safe jobs, seldom got the sack, and never called for performance-related pay. "To ask a teacher to show enterprise is just about as daft as asking a bank manager to take risks," he said. "It is not their scene." The business community must inspire the young with the sense of the adventure of business and technology, he insisted. But in another conference session a motion calling for business studies to be made compulsory for all secondary pupils "in the same way as English and mathematics" was defeated by an alliance of those who thought teachers were trying to do the right thing and those who believed they were beyond redemption. Mr Kenneth Evans, of Commercial Union, wanted business studies made a core subject rather than compulsory, and Mr Philip Pollock of Programmes Ltd said the resolution should be broadened to include universities. But British Aerospace's Sir Austin Pierce told the conference that the

## Skilled jobs going begging, say firms

A high proportion of Britain's firms are now finding difficulty in filling jobs which require particular skills, according to a CBI survey published this week. Shortages exist for staff with professional, technical and skills qualifications but also for drivers and chefs. Some 57 per cent of the 1,000 top executives interviewed by Gallup for the CBI reported difficulty in filling such vacancies at present, and a similar proportion expected difficulty over the next few years. It is the big firms, those with over 5,000 staff, which are having difficulty finding recruits with the right professional qualifications. Small firms are worried about shortages of skilled workers. Most of the respondents thought the shortages could be solved by more in-company training, but nearly as many suggested the colleges should do it with higher education and schools coming next. The Youth Training Scheme was low down on the list of favoured methods, although three-quarters of the firms questioned were involved in the scheme. The bigger firms were more likely to be participating in this and other Government measures, although manufacturing firms were not as often involved as other big companies.

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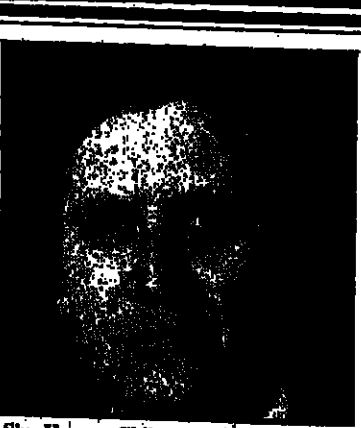
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## NEWS

## Pastoral courses urged for all new teachers

by Rick Rogers

Courses in pastoral care should be compulsory for teachers during their initial training, says the National Association for Pastoral Care in Education. In a working party report to be launched next week, the NAPCE argues that "it cannot be accepted that the pastoral aspect is an optional aspect of the teacher's role - to do so would be to imply that concern for the pupil and the climate of the school is separable from concern for growth and achievement". The NAPCE maintains that the lack of pastoral care training is so serious that it should take precedence over all other competing claims in the current debate on the content of initial teacher training courses. A recent NAPCE survey on training and support for pastoral care found that 87 per cent of teachers said their initial training had included either only a negligible amount of pastoral care work, or "simply nothing at all". The 1982 HMI report on *The New Teacher in School* found that 56 per cent of new secondary school teachers did not feel well prepared to take on pastoral work. The NAPCE, chairing its



Sir Henry Chilver - high-tech initiative.



Mr Peter Brookes - plans welcomed.

## Salford IT proposals offer hope for 'logical' girls

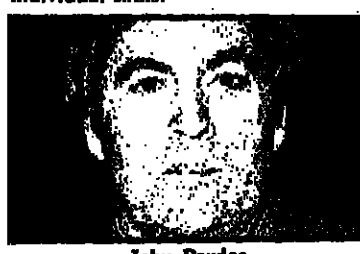
by Biddy Passmore

Girls with arts A levels who show an aptitude for logical analysis would be one of the main pools of talent on which Salford University would draw for its proposed Information Technology Institute. Salford's plans, which will be discussed with education and industry ministers early next month, envisage an institute catering for 1,000 undergraduates and 250 postgraduates (on conversion courses) by the end of the decade. The institute might start up next year but the first undergraduate intake would be in 1986. The plans came to light last week after the announcement of a parallel initiative by Sir Henry Chilver, vice-chancellor of Cranfield Institute of Technology. Sir Henry's proposal is for an institute with 800 undergraduates and 500 postgraduates, as well as a large intake to short courses, based at the high technology centre of Milton Keynes. Both proposals are aimed at reducing the urgent shortage of skilled manpower identified earlier this year by a working party chaired by Mr John Butcher, junior trade and industry minister. Butcher added pledges of

## FE plight of mentally handicapped

by Diane Spencer

Learning for Independence, edited by two of the staff from the National Foundation for Educational Research, looks at the opportunities available for the post-16 age group who were deemed ineducable before 1971. A survey by the NFER revealed that retarded students benefited greatly from their courses in FE or adult education, and the institutions had not been stretched as a result. Although there is a wide range of courses on offer, the amount is quite small and is purely local so that access in colleges and centres depends on the location of the individual. The authors



John Ashworth

Computer Extra - pages 35-46

UP 11.15.50



# People of two homelands – but no home



Migrant workers are not taking advantage of vocational training for jobs in industries such as car manufacturing

## Minority youngsters miss out on training

Only one out of seven young migrants in West Germany takes up vocational training – compared with one in two young Germans, a research project has indicated.

The rate of participation in vocational training is particularly low for young Turks and Portuguese – about 11 per cent in each case says a new study, *Vocational Training of Young Migrants in the Federal Republic of Germany*, published by the European Centre for the Development of Vocational Training.

The main reasons are that they do not have a school-leaving certificate or an adequate knowledge of German. The report also says that males have a 50 per cent better chance of undergoing vocational training than young

female migrants – adding that girls wishing to take courses face considerable resistance from their families.

It says that migrant girls have little contact with West Germans of the same age and their knowledge of German is, on average, poorer than that of the boys.

And it claims that the training aspirations of migrants are limited to a smaller number of occupations and that the risk of being unemployed is three times greater.

The survey's author, Klaus Schwelbert, based his analysis on information obtained from 2,500 young Greeks, Italians, Yugoslavs, Portuguese, Spaniards and Turks living in West Germany.

### GERMANY

**Paul Bendelow examines the problems facing Turkish families encouraged to 'return' to Turkey.**

A controversial Government plan to offer voluntary repatriation to immigrant workers' families is creating serious problems for thousands of Turkish children.

West Germany's Turkish community is torn between staying in a country that is at times, less than hospitable and returning to a home that has grown increasingly remote after years of absence. Neither option offers an easy future, least of all for young adults.

In November 1983, against a background of rising unemployment, the Bonn Government launched a controversial 12-month scheme of cash incentives to voluntary immigrant repatriation, causing many Turkish families to face serious thought to implementing previously vague intentions to return home.

The latest figures issued by the Federal labour ministry responsible for the scheme show that around 300,000 immigrants returned to their countries of origin in the first nine months of this year. Of these, Turks, constituting by far the largest immigrant minority in West Germany, formed the biggest single ethnic group.

Fears are being expressed, however, that Turkish families are inadequately prepared for the adjustment they will have to make in Turkey. Mecati Sahen, a Turkish teacher active in community relations in the Cologne area, believes that for young people in particular, the "homecoming" can be traumatic, especially for secondary school children.

"They are seen as immigrants in their own country", he says, "as *almanyali*, the people from Ger-

many." Often they do badly in school entrance or grade assessment exams, because their knowledge of Turkish is limited. In addition, their standards of dress, behaviour and discipline single them out for criticism among fellow pupils and teachers, particularly in smaller towns and villages.

The case, reported in West Germany, of a 16-year-old arrested for "break-dancing" in a public park in Izmir is indicative of the friction which can arise through ignorance of Turkish customs and standards of behaviour.

In August the Turkish authorities introduced one-month "re-integration courses" in a number of cities, to help returning young people to improve their Turkish and understand the Turkish school system.

According to Mecati Sahen, these had a "shock value" for the young people taking part, but little else. "The problem is that the teachers running the courses are largely ignorant of conditions in Germany", he says, "and they personally the authoritarian approach to teaching, which is totally foreign to pupils from German schools."

He believes Turkish teachers themselves need additional training to cope with the influx of returning youngsters.

The Turkish press has also reported returning families' complaints about difficulties in finding places in Turkey's foreign language grammar schools, the *anadolü lisesleri*, in some of which teaching is conducted in German.

"You need money, connexions and good Turkish", claims Mecati Sahen, and in any case, there are too few of these schools to offer any real solution.

Though the Turkish Ministry of Education is reportedly considering expanding their number, and simplifying entrance for returning immigrants, there are doubts that any speedy relief can be expected in this direction. Meanwhile, teachers working with

Turkish children in West Germany believe more should be done in this country to prepare those returning to Turkey.

The problem is recognized by West Germany's education authorities. In North Rhine-Westphalia, the Federal state with the highest density of foreign workers, a delegation from the regional parliament recently returned from a fact-finding mission to Turkey, aimed at assessing the extent of the problem.

Their findings show that pupils who have attended the supplementary Turkish language classes on offer in some West German schools have considerably fewer adjustment problems, because they have been partly familiarized with aspects of Turkish life and culture.

West Germany's largest trade union, the GEW, however, doubts that these extra lessons, which are in any case voluntary and designed to aid integration into West German society, can realistically take on the extra task of easing re-integration in Turkey.

About 15,000 Turkish children of school age have left North Rhine-Westphalia this year, roughly 10 per cent of the state's Turkish school population. In many cases, the parents' decision to leave was reached suddenly, prompted in part by further cash incentives offered by individual companies.

The steel city of Duisburg, for example, has seen an exodus of 4,000 Turks, including more than 1,000 school children, since the summer. The effect on those remaining, according to the GEW, has been detrimental.

Herr Frank Handke, one of the union's senior officials, believes the whole repatriation debate has boosted hostility towards immigrants and further undermined the motivation of immigrant children in school. "How can they work towards qualifications", he asks, "when they know they may be ripped up by the roots and transplanted at any moment?"

## Education 'split from society'

### TANZANIA

Tanzania's primary school teaching force would have to be increased by more than a third to bring average class sizes down to 50 per teacher, President Julius Nyerere told an education conference in Arusha.

He said the country's education service had not achieved the goals he had set out for the Government in his booklet *Education for Self-Reliance* in 1967.

The President acknowledged that adult illiteracy had been largely overcome and virtually all children now went to school at the age of seven, but added: "Taken as a whole we have not been doing what we had set out to do."

Tanzanian education had become divorced from society, he said. Parents, divorced from society, he said, were not involved in the work of schools and school boards and was slight, and school boards and committees, exerted little influence. Education had become the province of specialists to the exclusion of influences in society at large, and so was inadequately serving the needs of the nation. At the end of their education, students were now less self-reliant than during the colonial period, when useful practical activities had been part of the curriculum.

Most of the population received no formal schooling, he added. Only 2 per cent went on to secondary education but in the present economic situation this sector could not be expanded. Its main aim was to provide teachers for primary and tertiary education. Secondary education was not a right for all Tanzanians.

The President called for greater decentralization of educational decision-making. Some measure of control of initiative should be moved from Dar-es-Salaam to regional educational administrators.

Frank Nowikowski



TV's The A-Team – being aped by South African youngsters

children exposed to violent programmes were noticeably affected. They became much more aggressive.

In another study, Professor Elizabeth Nel of the university's social psychology department examined the male/female roles portrayed on South African-produced programmes. With few exceptions, women were either used mainly for decoration or as male accessories in the form of mothers, wives or girlfriends.

"Our television perpetuates the notion that if you are married you should stay at home and not work. Marriage and a job do not go together", she told *The TES*.

South Africa's television is also doing little to improve race relations, Professor Nel found. She tried to conduct a survey into racial roles as portrayed on local television but gave up when she discovered how seldom blacks appeared on the screen, whether in programmes or advertisements.

"Considering we live in a country where most people are black, I was surprised to find almost no coverage of black/white integration", she said. "In the few examples I found, it was

clear that television in South Africa has done little to stamp out stereotypical images we have of our different racial groups."

But the Human Sciences Research Council claims that television has made South African children more internationally aware.

Some 10,000 children have been observed by the HSRC in what is thought to be the largest study of its kind in the world.

Television has also made children – particularly adolescents – more sociable towards their peers and parents, the HSRC has found.

But the educational potential of television remains to be tapped.

With severe overcrowding in black schools and the dire shortage of qualified black teachers, educationists hold great hope for television's power as a medium of instruction. But at present no educational programmes are broadcast in the mornings and only a few go out in the afternoons.

The situation is unlikely to change in the near future. With the economy in a critical condition, there is little chance of government money to finance such schemes.

## TV gets blame for playtime violence

### SOUTH AFRICA

**Jean Hey on controversy about the effects and role of a still limited television service.**

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## Surrey sees a Danish slice of life

An insight into life in a Danish classroom is being given to pupils and teachers in Surrey.

A group of Danish headteachers and education inspectors have just completed a week-long tour of county schools in return for a similar visit by Surrey staff to Aarhus in Denmark earlier this year.

The Danes told their English hosts that their schooling system was very friendly and informal to the extent of all pupils normally being on first name terms with their head.

Social objectives, too, are considered as important as the academic and the same class may stay together for every subject for up to 10 years and be taught by a few teachers.

All staff in Denmark are trained to teach all subjects to children of all ages and no class is allowed to exceed 24 in number. And schools with more than 300 pupils are regarded as too big.

Ten Surrey schools are already organizing exchanges with their counterparts in Aarhus and the children going abroad will have the opportunity to decorate a Viking boat or practise traditional farming techniques.

Another feature of life in Aarhus schools is that pupils have been known to dress in animal skins as part of an attempt to follow a prehistoric lifestyle. They live with their teachers for a week in a reconstructed Iron Age settlement.

Richard Garner

## Foreign alert in Singapore

The Singapore immigration department has ordered further and higher education institutes to clamp down on illegally-registered foreign students.

It is concerned about foreigners who use work permits or employment passes illegally to register as students on full and part-time classes.

Many are thought to be from neighbouring Malaysia, seeking educational opportunities not available at home. A senior immigration official said that steps were being taken to find all who were studying in Singapore when not entitled to.

many they contain per gram. But we're not aiming for a completely germ-free diet, of course."

Raw vegetables are often given to French schoolchildren as an *hors d'oeuvre*, and these are particularly dangerous since they must be washed thoroughly and served quickly. The admirable French practice of making mayonnaise with fresh eggs rather than runnier for the bottle is also potentially dangerous, as it, too, cannot be made in advance and must be refrigerated immediately to await serving.

One of the biggest problems in large-scale catering is what to do with food once it has been prepared. Dr Plessier said, "The danger zone is between 6 and 60 degrees centigrade, which means that food has to be kept either at a very low or a very high temperature – never in between."

The Education Minister disclosed recently that in 1982 there were 1,500 cases of food poisoning in state schools, nearly two thirds of them in secondary and the remainder in primary and nursery schools.

Today, 3½ million nursery and primary children eat at school, and the demand in secondaries is often too great to be met.

The huge increase in the number of children taking school meals has led to stringent controls on methods of preparation, transport, re-heating and general management. Consequently, many school kitchens now look like operating theatres, with the chef's hat appearing strangely out of place.

Others lack equipment and know-how, and inspectors report a high risk of contamination. They blame unsuitable premises designed by planners without consultation with the people who were to work and eat in them. They complain that local authorities do nothing to improve existing facilities or to train staff, who are often ignorant of the basic rules of preparation and conservation.

However, out-of-date premises are not to blame in Champs-sur-Marne. Mlle Anne-Marie Matherat, head of canteen inspection in the region, said the problem was a serious lack of inspectors to ensure adequate control.

It takes very little to start an outbreak of salmonella enteritidis, which can be transmitted by carriers who are not ill themselves and who neglect to wash their hands. When thousands of meals are prepared in vast quantities by a caterer serving a large area, the slightest weak link in the chain can mean hundreds of children affected at the same time.



The big increase in children taking school meals has seen more stringent controls on standards introduced

## Salmonella from school meal hits 800 children and 150 staff

### FRANCE

**Outbreak may have started in a single egg, reports Mary Follain**

One contaminated egg could have caused an outbreak of food poisoning which laid low 800 children and 150 teachers and school meals staff. Magistrates, biologists and doctors are trying to discover how they became violently ill with gastro enteritis after eating a school dinner.

The Pasteur Institute has found salmonella enteritidis in the mayonnaise used in the *hors d'oeuvre* and in the minced meat served as the main course. Unlike its lethal cousin, which killed 26 patients in Wakefield, salmonella enteritidis is relatively harmless, although it has nasty effects on its victims and spreads with spectacular ease. About 20 people were taken to hospital, but all were out within about four days.

Champs-sur-Marne, a new town in the Paris area, was hardest hit by the germ and the municipality, together with angry parents, has begun legal proceedings to ascertain responsibility.

Experts say that a single, contaminated egg in a giant container of mayonnaise is enough to lay low an entire regiment – or several schools. They have been busy analysing 800 eggs seized from a company which normally delivers more than 12,000 meals a day. Before the outbreak it delivered 2,000 meals to nine schools in Champs-sur-Marne, but the mayor cancelled that contract immediately, under pressure from parents.

The company denies responsibility, and blames the minced meat also eaten by the children that day.

A town hall official in Champs-sur-Marne emphasized that although the municipality had found that both mayonnaise and minced meat were contaminated, the company's premises, the caterer is believed to be hygienic. "These bacteria can make time, the official added."

Dr Jacques Plessier, a gastro enterologist and consultant to two big Parisian hospitals, is familiar with such problems involved in large-scale catering, since he oversees several canteens for business employees.

"Control is stringent. Every month, 4000 sample dishes are checked for harmful germs to see how

## Businesses join battle on truancy

### UNITED STATES

**Deborah Kasouf on an alliance to cut absenteeism**

Progress is reported in an experimental programme to help reduce absenteeism and raise achievement scores of public school students in Boston, Massachusetts.

This is the finding of a preliminary study on the programme which consists of a "compact" between Boston businesses and the city's public schools. Under this the schools pledged to:

● Help out the absentee and dropout rate of students by 5 per cent each year;

● Increase the number of college-bound students by 25 per cent over a five-year period; and

● Ensure that by 1986 every graduating student would be able to meet basic academic standards in reading and mathematics.

In return, under the 1982 agreement, local businesses agreed to give first priority to hiring local high school graduates for vacant entry-level positions with their companies.

Any student who passes the required competency tests and meets the school attendance criteria can take advantage of the jobs aspect of the programme.

Officials say that 415 high school graduates were placed in entry-level jobs last year.

Figures from the programme's first two years reveal that progress has been made towards reducing absenteeism and raising achievement scores. But there has been only a slight improvement in the drop-out rate.

Average daily attendance rates in the city's 17 public high schools increased by 5 per cent between the 1981-82 and the 1983-84 school years. Achievement scores in all high schools also increased during the same period, according to the Boston school department figures.

In the reading section of the district's basic-skills test, the median

ninth-grade score improved by eight percentage points; the tenth-grade by six points; and the eleventh-grade by four points. In the mathematics section the ninth-grade score improved by 12 percentage points; the tenth-grade by four points; and the eleventh-grade by six points.

However, 14 of the city's high schools still report median reading scores at or below the 30 per cent, and 10 have median mathematics scores at or below that level.

To combat this problem, new standards have been agreed to. Over the next two years, students will have to pass a standardized reading test in the fifth, eighth, and twelfth grades as well as curriculum-referenced tests twice a year in every class as a condition for grade promotion.

The new standards also raise the minimum attendance requirement for graduation from 80 per cent to 85 per cent of the time in classes.

The number of students planning to attend college increased slightly in 1983-84 – 57 per cent of high school seniors said they planned to study full-time this autumn compared with 54 per cent last year.

Preliminary figures also show that the programme has had little success in decreasing the high school drop-out rate by 5 per cent per year. The drop-out rate increased by more than 3 per cent during its first year and the rate for 1983-84 fell only 0.5 per cent from the 15 per cent recorded in 1982-83.

Boston school officials express cautious optimism over the preliminary findings. But they feel that a much broader approach may be needed to combat the high school drop-out problem.

The study shows that the business side of the compact has also been successful. More than half of the 415 graduates who were placed in jobs in 1983 had responded to the survey; and 92 per cent of them were either still working or had gone on to college six months later.

Of those still working, 70 per cent were with their original companies.



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# Objectivity and accuracy proper demands of HMI

Sir - It must not go unremarked that your two correspondents (TES, October 26) who express themselves in opposition to the considered opinions of my chairman colleagues and me (as voiced in your columns on October 12) make no attempt to refute us with any rational argument, but have recourse, rather, to that emotionalism and pseudo-scholarship which is the hallmark of the ill-informed and uncomprehending polemicist bent only on obfuscation.

No one more fervently hopes for independence on the part of the Inspectorate than do we; but independence not only from political pressure from the Right but from the Left equally, and especially from those "trendy-left" activists and their allies and proponents now so firmly enshrined at every level of the so-called "professional" pressure groups and lobbies.

What we are looking for, primarily, is objectivity: objectivity divorced from the clan-trap and the shibboleths of the now discredited '60s (when most Inspectors were trained) and which is indicative of their having grown in perception as a result of experience, rather than of a harking-back to the unreality and extravagance of an age now properly consigned to limbo.

Above even such objectivity, however, or really in tandem with it, we have a right to expect - Not We have a right to demand! - absolute and impeccable accuracy, for on that (and on that alone) can the satraps of the Inspectorate themselves arrive at any validity in judgment whatsoever. How lacking has been that accuracy (and

how mildly its absence was rebuked by the description "ill-informed") the following example shows:

"S918/404/102 88/84 SZ 67/83."

EQUIPMENT AND RESOURCES

5.1 The Capital Allowance for 1983/84 is £7,500. . . . .  
On receipt of the report, I caused a check to be made. The capital allowance received by the school in question in 1983/84 was £1,216, of which £8,275 (£25.44 per pupil) was the "education allowance" and £2,941 the "administration allowance". The head has complete freedom of reinvestment from "administration allowance" to "education allowance" but not vice versa.

Moreover, in 1983/84 there was an unauthorized overspending of approximately £850. In 1982/83 capital for this school had been £10,388 and this year (1984/85) it will finalize at £15,163, although this figure will include a special grant for library enhancement of £1,000.

I do not know who were the authors of the report. Nor, to be blunt, do I care. But if they can be so cavalier in their misrepresentation of such readily verifiable fact neither they nor their apologists can properly call it an Inspectorate's omniscience is occasionally brought into question by the knowledgeable as to opinion!  
There remain two further implications. First, so small is the actual sample on which the Report on LEA Expenditure Policies on Education Provision in England is based that inaccuracies, such as the example I have given above, disclose, even if occurring only in a few cases, could have pro-

found and destructive effects on any conclusions drawn. Paragraph 4 on page 2 of the report in question makes this abundantly clear.  
Secondly, your same issue of October 26 has a report on the address by Mr Eric Bolton, Chief HMI, to the National Association of Schoolmasters/Union of Women Teachers education conference in Nottingham. I quote:

"Much of the evidence he received suggested (that teachers') morale was not good, he said" (italics added).  
If the evidence Mr Bolton receives on that score is as tainted as is the data to which I have alluded above, then it is small wonder that many of us much closer to the "chalkface" than he is do not share his gloomy sense of foreboding.



Eric Bolton

ing. Of course it is a classic trade union ploy to assert and to reassert the imminence of doom. True professionalism, however, requires somewhat more sophisticated assessment.

D J M MUFFETT  
Chairman  
Education committee  
Hereford and Worcester

## Tongue tide

Sir - I found David Rose's article on what he called "Estuary English" most interesting, though possibly a little imaginative in parts.

What struck me particularly, however, as a lover of Spanish, was the fact that somewhat the same phenomenon occurs in South American Spanish, where the "pull" of the River Plate and its estuary and the subsequent founding of the two great cities thereupon, Montevideo and Buenos Aires, has given rise to the term "rioplatense".

Spanish.

It is no surprise that the city dialects have dominated the life and culture of the two nations, and that the "pure" country dialects of the Andean provinces, although closer to European Spanish, are nevertheless regarded with less esteem and affection than the true "rioplatense". Will Old Father Thames continue to work the same magic?

GEORGE HURRELL  
Department of Languages  
Kingsway Princeton College  
London WC1

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## Tangled turtles

Sir - I do not wish to enter into a debate on the relative merits of corded and cordless floor turtles, but if Mr Cooche's children are suffering from frustration as the turtle ties itself up in its umbilical cord (TES, Letters, October 26) it is because he has presented an inherent feature of all umbilical devices as an unavoidable nuisance rather than as a problem to be solved.

Most children are far better than adults at problem solving. Encouraged to think of this as a problem rather than a nuisance, they soon produce solutions. For example, as the "total turtle turn" for any closed shape is always the same, any sequence of closed shapes can be drawn by making them alternately clockwise and anticlockwise. Most children can produce this solution without adult help; they can produce equally satisfactory solutions to other problems.

Children of this age have only a limited capacity for abstract reasoning, which is of course why turtles are used in the first place. Thus, they cannot always foresee problems of this nature, and will have encountered them for themselves - so it is necessary for them to be allowed to get frustrated once or twice. But to allow children to go on being frustrated by the same problem unlearned times is just bad teaching.

Children are very good at solving impossible problems. All adults have to do is not to let the children know the problem is impossible until after the children have solved it.

BARRY GRAY  
24 Balmoral Road  
Gillingham  
Kent

## Canard roasting

Sir - We really must roast the old canard, propagated even by Robert Spooner (TES, October 19), that parents are only those of "advanced" children, and that there is no "constituency of parental interest".

Those of us who campaigned through the 1960s and 70s for the abolition of the 11 plus, when our children might be expected to succeed at it, and then for the implementation of comprehensive education within the recognized schools, did so because we passionately believed that what was in the interests of our children was also in the interests of all children, and therefore of the community (as Hadow nearly said).

If the disheartening gap between the rhetoric and the reality is to be bridged, then we must all try to create a working partnership which at least aspires to the idea of democratic participation and open discussion. There are very many parents, teachers and administrators, and quite a number of politicians, too, who have been working steadily towards the kind of opportunity which now exists to take a serious look at the curriculum, at assessment, at the expectations created for students within the education system. The one thing on which all are agreed is that none of it is yet nearly right, but there are some challenging pointers which need to be vigorously and imaginatively pursued. Sympathetic heads like Robert Spooner can provide an important lead and the first requirement is for mutual trust. It was an interesting juxtaposition which put next to the report of the NAGM conference the news item of the award to David Hargreaves for his book *The Challenge of the Comprehensive School: Culture, Curriculum and Community*.

E O JAMES  
Deputy Head  
Southland's School  
New Romney  
Kent

## MAURICE PLASKOW

The Right to Comprehensive Education  
24 Burwood Park Road  
Walton on Thames, Surrey

## Steady change

Sir - It was a pleasure for us to cooperate in your article on design education in Cheshire (TES Extra, October 19) and we thank you for your kind words. However, two important factors failed to emerge:  
● That there have been no sudden changes since my arrival. Curriculum development involving cross-curricular working parties is a continuing process which has been an important aspect of the school since its inauguration in 1973. The increasing integration within art and design is part of this evolution.  
● That the whole of the teaching staff of the school appreciates the need for curricular breadth for students of all abilities.  
It is within this climate that art and design and all other subject areas have been encouraged to develop.

## Lolita wronged

Sir - The sexual attractions between teacher and taught and the further establishment of an intimate relationship between a student and teacher represent a most interesting, though tacitly neglected aspect of classroom psychology.

The personal and professional consequences of that involvement are serious matters deserving of far longer and more discussion than that provided by Mr Durham's litany of scandalous revelations and true confessions of naughty misbehaviours in his article entitled "Teacher's pet" (TES, October 26).

This really was a tasteless bit of tom-peeping, a grotesque and salubrious sort of humbug voyeurism. The author's lack of perception is perhaps captured in the little Freudian habit of his undisturbed pen, the lecherous assertion that (nudge nudge, wink wink) "most teachers know about it".

Oh, poor pubescent Dolores! To be so misrepresented now as an archetypal teacher's pet, a flirtatious and teacher-teasing schoolgirl! School! Poor misread and unread Professor Vladimir Nabokov.

O G HUMBART  
3 Brook Street  
Wivenhoe  
Colchester CO7 9DS  
Essex

## Virtue in waiting

Sir - I read with interest the article on teacher-pupil relationships. I was taught by a 23-year-old man when I was 17 and in my final school year, we married two years later but the relationship flowered only after I left school. Much as I would have preferred otherwise, my teacher felt strongly that he was bound by professional ethics, and never conveyed his feelings by word or glance.

It was a miserable year for me, but after 11 happy years of marriage I am satisfied that his approach (or lack of it) was wise. In the same year our headboy was involved with one of his female teachers. This relationship became known among the students as a subject for gossip and innuendo. The effect on classroom discipline can be imagined. The attitude of students to the staff generally was subtly affected.

Although that romance ended in a happy marriage the effect on the school as a whole was negative. I am convinced as a result of my experience that the person in control of these situations is the teacher. No adolescent in the throes of first love is capable of making judgments about the wisdom or otherwise of pursuing such a relationship.

C A MCGREGOR  
9 Purcell Close  
Broadfields  
Exeter



Believe me, Karen, the last thing I'd discuss molecular biology.  
- Barry Fantoni, The Times

# How the wife of a Gujarati can be labelled a racist

Sir - Much good may yet come from the Honeyford debate ("Labour foiled in bid to oust race-row head," TES, October 26). Since the 1960s, ignorance and rigid suspicion of bilingualism has been replaced by a multicultural policy which is far too naive and simplistic, and completely unyielding. I do appreciate the efforts made to establish this policy, but could we not be a little less uptight about it?

I speak as a researcher into semi-lingualism in Britain since 1975. I am prepared to support much of what Mr Honeyford is saying from experimental and observational data. One is simply not permitted to introduce a wider debate and one runs the

risk of being called "racist".  
This was as much a surprise to me as I dare say it has been to Mr Honeyford. I have a Gujarati husband and in-laws of some 20-plus years standing.

Multicultural education needs lots of time, lots of money, and lots of expertise. It is a complex area. I understand Mr Honeyford's arguments to be that we should put the children first, all the children, and see what policies they need as a secondary matter. Isn't this impeccable educational practice and isn't it time we were moving in this direction?

FIONA MASTER  
Department of Psychology  
University of Leeds



## Asian languages

Sir - Ms Jennie Ingham raises two important points in her article "Speaking in tongues" (TES, October 19); namely the status of home languages and continuation of Asian languages classes by the voluntary groups despite their availability in schools.

We Asian teachers are equally worried about the attitudes of those who are either employers or determining entrance to higher education. Will a pupil with O or A level in Gujarati or Punjabi or Urdu be treated on a par

with those with French O or A level? If Asian languages are to be given equal status then universities and polytechnics must announce this now so that pupils can be free from unnecessary anxiety. Of course, it will be racist to consider Asian languages as Third World languages and, therefore, inferior to any European languages.

The fact that community-organized classes in these languages continue clearly demonstrates parents' lack of confidence in schools and L.E.A.s. Their fear is that they may hinder or stop children learning their mother tongues. Even now, school time-tables are

## Confused cores

Sir - Your report of October 19 on the relationship between the Certificate of Pre-Vocational Education and the Youth Training Scheme ("Summit to sort out course chaos") was wrong in two respects and questionable in two others.

I note your report that the Joint Board for CPVE is "well into negotiations with the Manpower Services Commission over aligning the core requirements for the two certificates" and that the MSC has been "trying hard to get its own version chosen". Neither observation tallies with the work of the CPVE development steering committee on which I have served.

As for your judgment of the YTS course being the "less comprehensive" of the two, it must be said that comprehensiveness is an inappropriate standard for comparing the two. Neither core claims to be a "syllabus" as such. The CPVE core is described on page 22 of the consultative document as "a checklist against which the performance of individual young people must be matched in order for starting points to be agreed". It consists of a highly differentiated collection of skills, knowledge and attitudes which are judged to be relevant to young people's passage into adult working life.

The YTS core consists of those skills which are commonly required across a wide range of tasks and which are essential for competence in those tasks. It does not, however, aim to describe the totality of desirable learning objectives for the YTS. The skills are personal effectiveness, instanced in the personal and career development area of the CPVE core, are YTS framework. If you want a comparison, then, it is only fair to measure the CPVE core against the totality of YTS outcomes beyond occupational skills.

Unless there have been dramatic and sudden U-turns, you are also mistaken in reporting that CGLI and BTEC are not committed to accepting CPVE for the purpose of progression to their existing courses. Both, in fact, are thus committed in principle.

I am surprised by your report of the board having discovered only "last week" that the MSC and Department of Education and Science had met to discuss the relationship between CPVE and YTS leaving certificates, since the time and only such consultation was certainly reported to the board's development steering committee on July 16.

Finally, you state that the availability of a part-time route for the CPVE will make it "virtually impossible for the MSC to prevent YTS trainees going for the CPVE in preference to the MSC's own leaving certificate", as if the part-time route were bad news for the MSC. In fairness, then, it should be said that, from the beginning, the MSC voice was among the most vocal in pressing for such a route.

While on the subject of what is what in the YTS and with particular reference to your "YTS should teach work skills", it is wrong to put the YTS at the opposite end of the skills spectrum from job or occupational-specific competence. That particular slot is occupied by the sort of multi-occupational "baster" courses which are now discouraged by the MSC. The YTS is "broad-based" in respect of its attempt to develop skills of a widely applicable sort within the framework of occupational boundaries. This requires a different style of training for occupational skills, which is not at all the same as not bothering to train for those skills at all.

## ROB VALENTINE

Project leader  
YTS core project  
Yorkshire & Humberside Association for Further & Higher Education  
Leeds

## LETTERS

## Muslim schools

Sir - The latest statement by the NUT regarding the recent development within the Muslim community to set up their own schools seems quite absurd and reflects the teachers' inability to cope with the facts of the situation.

The Education Act 1944 clearly entitles communities to establish and operate denominational schools. Such schools are abundantly available for Christian and Jewish communities. Why is it then, that when the time comes for Muslims to avail themselves of this facility, the move appears "divisive"?

Muslims wish no more to enclose themselves in so-called "ghettos" than the Anglican, Catholic or Jewish communities who have their own schools already. We assume, therefore that the NUT's statement, if it is to be taken seriously, calls for the abolition of these schools.

Islam, as a way of life, does not teach isolation or a particular racial, ethnic, tribal, class or caste ascension; its message is addressed to all people. Muslims have already contributed to the material and moral progress of this country by their hard work, healthy and positive outlook and by proving themselves to be God-fearing, law-abiding and a self-disciplined community.

God-willing, their moral and religious educational influence will only enhance the stature and strengthen the moral fibre of this country, if given the chance to do so.

## YUSUF ISLAM

Patron  
Islamia Primary School  
8 Brondesbury Park  
London NW6

unable to cope with the demands of these community languages, and excuses are put forward that trained and qualified teachers are not available but L.E.A.s do appoint instructors in other shortage subjects.

Until schools or L.E.A.s guarantee the parents that their home tongues will be taught, the additional "burden imposed" on the younger children will continue.

## ABDUL SHAKOOR BORA

24 Lincoln Street  
Balsall Heath  
Birmingham

## Cuts go deep

Sir - Your leader of October 12 ("The cuts that never were . . .") was a scandalous exhibition of elitist myopia. Cuts in the number of university places, at a time when the highest number of 18-year-olds were leaving school, has not, we are told, "greatly reduced the chances of the latest crop of sixth-formers going on to higher education . . . Such ignorance," we are informed, "needs to be dispelled, and it is part of the job of sixth-form teachers to let the facts be known".

I have been a sixth-form tutor for five years and here is the most important fact for your leader writer to grasp: when universities become harder to get into, more students with good A level grades apply to and enter polytechnics and colleges of higher education. The polytechnics are then led to increase the level of their entry grade offers for degree courses. Result? Students who got into polytechnics three years ago with poor A levels, and who have since taken good second-class degrees, would have stood little chance of getting in this year.

If what you really meant to say was that students with good A level grades can still get on to degree courses in higher education I'm prepared to agree with you. If, however, you seriously believe that the cuts have not greatly reduced overall educational opportunity then I'm afraid the ignorance you deplore is to be found nearer to home than you think.

I suspect that it was a "grammar" sixth form the writer had in mind when making these assertions.

## CHRIS DUNNE

London Fellow  
Centre for the Study  
of Comprehensive Schools  
3 Glen Court  
67 Burnt Ash Hill  
London SE12

## Rule of tongue

Sir - Most speakers produce non-grammatical utterances (with varying frequency) but even so they are understood by other people. This is not so with computer languages, because if an utterance (say a line of program) is non-grammatical, the meaning of that line will not be understood by the computer. Another term for grammar, more commonly used with computer languages, is "syntax".

There is a crucial distinction between "meaning" and "grammar" in the case of computer languages, which is not as important for ordinary languages. For ordinary, spoken languages, the difference between syntax and semantics can be the key element in much humour: a pun, play on words, or a "knock, knock" joke depend upon the human ability to extract more than one meaning out of the same utterance.

The study of the meaning of an utterance in ordinary speech, or the meaning of a line of computer program, is termed "semantics"; and the study of any language is the study of both its syntax, and its semantics. Ordinary spoken languages are often known as "natural" languages, and with natural languages the rules are often not explicit, as they have to be with computer languages. Natural languages are not planned; they evolve.

I consider that one important reason why so many computer programs are badly written is that the programmer

often uses the same approach to writing programs as he does in speaking his native language. Natural language is noted for its ability to fudge, and its lack of precision, which is commendable in a spoken language, but is to be deprecated in programming a computer.

The incoherence of many programs is related - so I believe - to a general malaise in education. The malaise is the fear of precision, the desire to take the easy route - the "never mind the spelling, feel the emotion" syndrome. As the study of grammar becomes less and less important in teaching English today, tyro programmers are often unaware of the importance of syntax in their own spoken language, let alone in a programming language.

Anthony Burgess notes (in *Language Made Plain*) that it does not matter if "gauge" is spelt "guage" because we all know what it means. But do we? Burgess' position presupposes an erudition on the part of the reader, which is not shared by the person who cannot spell. Sympathy for the illiterate is inverted snobbery from those who are not illiterate - and is unfair to the illiterate.

Computers, however, are not fooled. One underestimated benefit which comes from the use of computers is the realization that words are important, and that sometimes rules have a purpose.

G J BORIS ALLAN  
5 Abbottleigh Drive  
Bramhall  
Stockport

## Scope of micros

Sir - A little corrective to the views on the "Concerned Technology Conference" and the "Microspecial Pack" (TES, October 19) expressed by Andrew Fluck and Phil Odor is, perhaps, in order.

To carp about the conference and lack of subsidy of the Microspecial Pack and to plead the hard work of those involved in its preparation, is to direct attention away from the important question of the pack's utility.

The pack is aimed at "14- to 16-year-old pupils with moderate learning difficulties". Much of the software is concerned with "Life and Social Skills". This is a very narrow specification. The content of the pack is wider in application than the original brief would suggest.

On the other hand, the equivalents of many of the programs have been published elsewhere. From the point of view of the special school, why buy a program which does a similar job to one already used in mainstream?

Is it not preferable to adapt the mainstream software to the needs of the particular pupils? This surely is more in keeping with the aims of the 1981 Education Act.

The machinery upon which the pack is to run is not specially fitting for those with special needs. While the BBC Microcomputer is probably the best of a bad bunch, consider its means of communicating with the child. The user types messages to it; and it, in return, replies by writing messages on a TV screen. The micro can draw pictures to help get across the message, but how effective are these in reality?

## Shared concern

Sir - The concern felt by Mr Dore and others (Letters, October 19) about the place of oral communication in English examinations in the GCSE was a concern felt by the Secondary Examinations Council when it gave its advice to the Secretary of State last December on introducing a single system of examining.

The present position is that the joint council of GCE and CSE examining boards proposed that oral communication should be a compulsory endorsement of the title English on the new certificates, and that it should be awarded on a shorter grade scale than GCSE. The Secretary of State recognized that doubts had been expressed about the practicability of conducting oral assessments and he invited the SEC to advise him "on the prospects for disposing of those doubts, taking account of the language work of the Assessment of Performance Unit".

The SEC concluded that the joint council's proposals were welcome at this stage in the development of the single system of examining, but was unable to take account of the APU's

As an audio visual aid, tape slide leaves the micro standing.

At Ravenscliffe, we specified the minimum configuration for a school micro back in 1980. In addition to (then) paper specification of the BBC Micro, we required two additions. The first was a means of interfacing the sheets of paper we customarily used, the second a form of acoustic language output.

Using the Concept keyboard and the Votrax Type N Talk we significantly enhanced the best of the Micropresenter for use by our children. We have for use by our new dimension to LOGO. Our little word processor lets the children hear what they have written; when they are a bit further on we can use the Concept keyboard to provide a simplified front-end for VIEW (which we also use in the office).

In my opinion, the decision not to subsidize the Microspecial pack was correct. The programs, and the machinery, now have the possibility of being evaluated by the willingness of practising teachers to outfit what limited funds schools have. Those items from the pack which are of lasting value will survive; those with equivalents elsewhere will be judged against them, and those which lack educational validity will vanish.

The real question remains however: do we, as yet, have an educational microcomputer for which to write software? My answer must be no, only the potential for one.

M P DOYLE  
Deputy Head  
Ravenscliffe Centre  
Bradford

work on oral communication, except for its first report on the work done on "oracy" at age 11.

We are therefore in the position of waiting for the publication of two documents: the final form of the joint council's national criteria for English, and the first "oracy" secondary survey of the APU. It is expected that oral communication will become a compulsory endorsement of English in the early years of GCSE, with a review being undertaken when more is known of the APU's work. Let me assure Mr Dore that the SEC does view this matter as being very important, as it said to Sir Keith Joseph last December.

## PETER DINES

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## English or language?

DENNIS CARTER

The promotion of the term "English" rather than "language" has important connotations. "English" means the language of school lessons, and school is thus a house of correction for children's language rather than a place of enrichment for their burgeoning powers over words. "English" harks back to the textbook and exercises model, and this is where the biggest response to it will come. *English from 5 to 16* is a setback to those of us who strive to enhance and refine the dynamic relationship between children's language and their whole experience.

Appropriateness never means the appropriateness which may be perceived by children. The word "appropriate" is the cornerstone on which an ideology of language development by behaviour modification is built. "Appropriate" is in the charge of teachers and inspectors. For instance, how many HMI's would consider the shouting of "Scab" an appropriate form of speech for a child to adopt? But to those who are hungry in pit villages it may seem most appropriate.

The Inspectorate asserts that children should be taught to speak and write "in appropriate forms" for "a variety of audiences". Now this may be a relevant pursuit for teenagers but it has no place in the primary school. Children do not self-consciously switch styles of speech and writing to suit different audiences. Indeed, children do not even think about audience when talking or writing. They speak and write what they think and feel. If primary teachers start trying to fulfil this aim the likely outcomes will be tracts of unoriginal, bland language.

Similarly with reading: the document claims that children should read "using reading methods appropriate to the material and the purposes for which they are reading". But children do not approach books in this way. They only read "fluently and with understanding" that which interests or moves them. HMIs may wish that children be so well-programmed that they will read that which bores them to death. But they will not. They cannot. A book or passage must connect with meanings inside the children or they will switch off.

Dennis Carter, is head of Tallent Junior School, Shotton, Chwyd

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## TALKBACK

### Days of action

RICHARD WATSON

I have been involved with in-service training (INSET) for about 10 years, through an area English Teachers' Group, through the National Association for the Teaching of English and through a number of courses, some weekend, and one lasting for a year called *Managing the Secondary School*. I have gained a great deal from them; insight into how other schools tackle problems; knowledge of new methods and books. However, I suspect there are many teachers who feel they have little to gain from going on courses. Courses are not to do with the real classroom world and in some cases they are seen as an escape from it.

The best two I have been on have been within our own school. The first was when the fifth-year pupils left and departments were given the opportunity to meet for a day; other staff covered lessons for that day and in turn we covered for other colleagues. We had uninterrupted time to assess our work as well as lunch at a local hotel. Many home truths came out.

The other course happened by chance; it took place on the Day of Action in 1982 when the caretaking staff stopped work to support the nurses and health workers. The school was closed to children but teachers came in. This gave the opportunity for a full day's discussion with everyone involved. Mixed-ability teaching, a school resources centre, a life skills course were discussed in a series of working parties. The progress made on that one day has led to development in all three areas.

After years of meetings after school, in lunch hours, in teachers' centres and at residential courses I have come to the firm, if obvious conclusion that if schools rather than individuals are to benefit then all staff need to be involved. Probably Sir Keith himself agrees with the magisterial sentiment. He probably won't agree with the next one: time for INSET will have to be found within the contractual day. It is a *claque* to say that schools need the time to do it; teachers will not have the time to stay back for sessions of up to two hours after school and carry out all the valuable extra curricula activities.

Over the past year in our school these have included: a major and two minor schools productions, numerous sporting fixtures on Saturdays and Sundays, monthly discos, various PTA fund raising events supported by staff, a sailing club, many musical competi-

tions, school dinner duties and dance time clubs, a science club, the Year opening after school plus a variety of committees.

I believe there is an easy solution. Give the children an extra 10 minutes a year, at the school's discretion, while the staff would be contractually obliged to come to school. In this way curriculum material could be planned, examination board meetings attended, reports written, and school issues such as the provision of the less able could be discussed. Management could discuss, at large, timetable possibilities and problems and courses. Such a move would be beneficial, effective learning is not measured in the hours a person spends in a classroom but in what goes on during that time.

Part of the problem of running teaching is that on the one hand there are the "long" holidays, then, as guilt compensation, a rush of preparation and administration packed into each crowded term so that by the end of each term everyone is drained to think of sensible alternatives. Also it would bring the staff sections more into line with the independent sector which, in general, longer holidays and where residential staff have the time to talk with each other.

Richard Watson teaches at Rumbold School, Loftus, Cleveland.



## Leave it out

STAFFORD SHERLOCK

The Bullock Report asserts, and *English from 5 to 16* quotes, "... language competence grows incrementally, through an interaction of writing, talk and experience, the body of resulting work forming an organic whole."

Then, both reports having held up the seamless garment for our approval, proceed to tear it into very small fragments. We are presented with lists of language functions with no attempt being made to establish any hierarchical order. Indeed the undesirability of any such attempt is made clear by the authors.

Yet it must be obvious to every practising teacher of English that priorities will assert themselves within the constraints of a school timetable, and it will be equally obvious that many of us will want to assert that the place of literature and creativity will occupy positions towards the top of any list of priorities that we draw up for ourselves.

The Inspectors imply, like Bullock, that literature is merely another function of language, different from but not superior to the instructions on a packet of custard powder. This is never directly stated of course but, is implied.

Ambiguity, precision, energy and infinite variety of literature cannot be spoken about in the same breath as a piece of transactional prose. Neither will a work scheme which carefully includes opportunities for practice in all the functions of language make the child want to write. Any practice which creates that desire must have primacy.

Of course we welcome the Inspector's concern that pupils should be brought into contact with a wide range of linguistic and literary experiences.



They would, however, do well to listen to the comments of a colleague of mine who, commenting on our first-year syllabus, said: "I feel very crowded. There's so little time to get through everything."

The class reader, our core of poetry to be read and considered, our drama, our library period, our language work, our projects, our collages, our oral work: all these jostle for space. If we are expected to do more, if we are to add to the list then Her Majesty's Inspectorate must make firm recommendations that we be given more time in which to do it.

One alternative would be to reduce the time spent on literary and creative activities. To do this would not so much sever a limb as remove the animating spirit of the whole organism. We think that we have our priorities right; we would like the Inspectorate to give unequivocal expression to their own.

Stafford Sherlock is head of English at Cheltenham Comprehensive, Gwent.

## Dead of night

ELIZABETH WEST

Bella is a happy chatterbox. Other children come to my office each morning with the class dinner-register and just dump it on my desk with a giggle and then scurry away. But six-year-old Bella always stops to chat.

"Do you know what?" she always says. "What?" I always reply. And then Bella goes on to tell me about the things that have happened at home - the antics who have called - the

children who have come to tea. "And to-day I am going to Sharon's party and I'm wearing my best pink dress that Auntie Jean made and I've got present all wrapped up in pretty paper and it's a secret, so I can't tell you."

From Bella's chatter I have learned all about the new car daddy bought and the doll's house he made her. When Bella's baby brother was born the chatter reached a new peak of excitement. "And he's small and pink and has little tiny fingers, much tinier than mine, and we're going to call him Robert."

I received a daily report upon the progress of Robert. I heard how the christening went, how Auntie Jean made Robert some white booties, and how Robert was very good and didn't cry very much. Then, one afternoon, Bella's mother - looking white and distraught - came early to collect me and I learned later, from talk in the

## TALKBACK

The page for readers - teachers, administrators, students and parents - to describe their experiences of education and views on the issues. Articles not exceeding 750 words should be sent to Talkback, The TES, Priory House, St John's Lane, London EC1M 4BX

staffroom, that baby Robert - healthy, bouncing, adored and cherished - had been found lying lifeless in his bed-room one morning. A victim of the mysterious "cot death".

Bella was absent from school the following day, and when she reappeared at the end of the week she was very pale and her eyes stared out from her face round and bewildered. She crept to my desk with the dinner register and looked up at me. "My baby brother died," she announced.

Bella continued to come to school each day, and she carried out her normal duties with a thoughtful, puzzled and detached manner. Then, on the day of the funeral she was absent again. The head wrote a letter to Bella's parents; the school sent some flowers, and we all grieved for Bella and her family.

Two days later Bella was back at school. "Do you know what?" she

said, running into my office with the dinner register. "What?" I replied. "We said goodbye to Robert yesterday, and there were lots and lots of flowers, and baby box and he was lovely little white and I wore my best white dress and my long white socks and new black shoes and I put a special bunch of flowers on the white box for Robert, and now he's gone to Jesus."

I can only imagine what sort of terrible fear this tragedy must have upon Bella's mother, but to Bella herself the life and death of baby Robert is now being placed tidily alongside all those other ups and downs of life that she has to cope with when you are six years old - and a happy chatterbox.

Elizabeth West is a secretary in a West Country Primary School.

## School for life

PADDY McEVROY

What fuels the thinking of the anti-racist, anti-sexist lobbies is the blanket rejection of certain human rights. They insist on enshrining respect for, and equality between, persons in social, educational and political demands.

But if the anti-racist, anti-sexist movements are seeking to advance the cause of human rights, should such movements impose convenient limitations on the own values of interest in the human rights field? I believe their campaign for such rights stops quite emphatically outside the door of the abortion clinic.

Very few of the children currently passing through our school system have their innate pro-life instincts reinforced by teachers who defend the right to live those in the womb. The soft-peddling that is in vogue on the rights of the unborn undermines the impact of human rights work that lies at the core of anti-racist and anti-sexist teaching. If the right to live becomes relative rather than absolute it should be, we cannot claim to be presenting a credible ethical system to our young people.

The moral relativism found in our schools will undermine the very philosophies that the anti-racist and anti-sexist movements seek to get across. Positive self-image, self-respect, and love of life cannot be the end product of the collision that passes for our present fashionable educational thought.

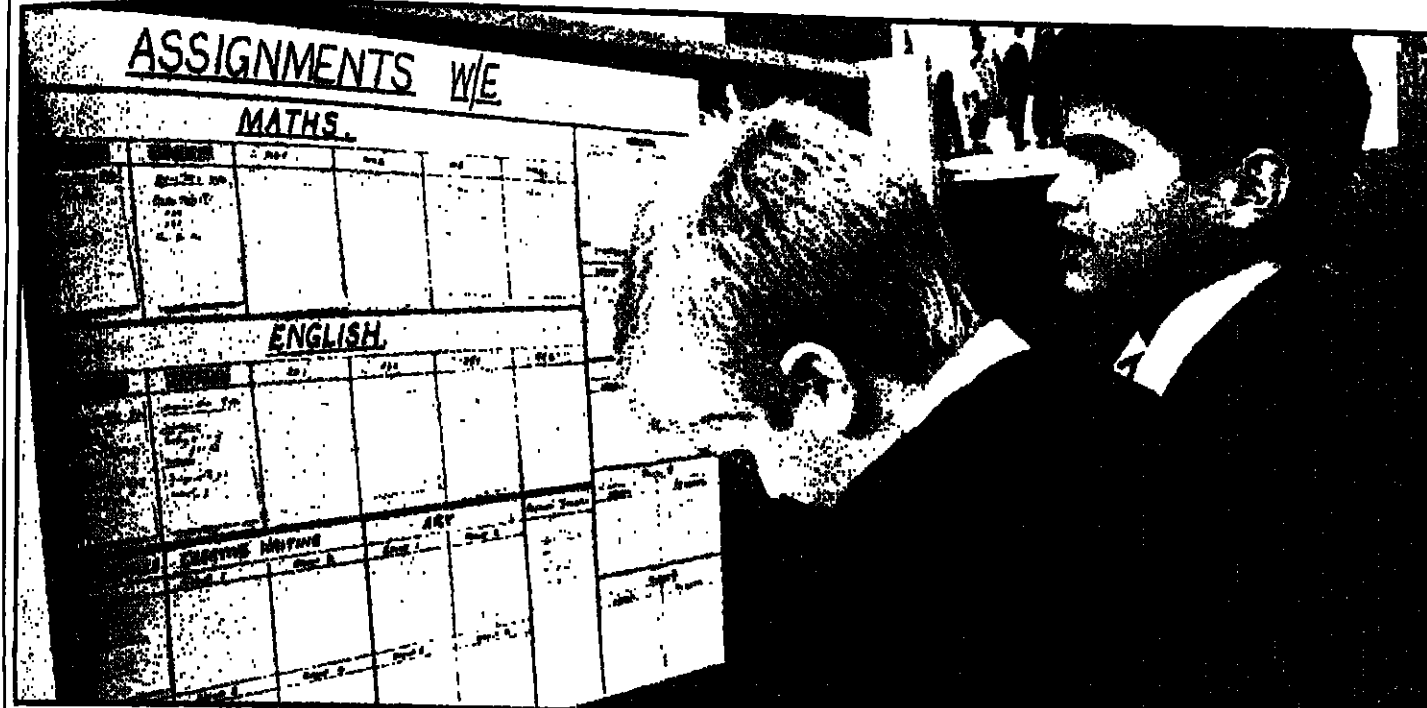
The Holocaust demonstrated the most virulent form of anti-Jewish racism. The Silent Holocaust against the unborn is an attack on the human race itself.

The pro-life School, whether religious or humanist, would appear to be the only educational institution that can truly embrace the rights of all.

Paddy McEvoy teaches in a Brent primary school.

# MAKING SUBJECTS THE OBJECT

As HM Inspectors call for more specialization in primary schools, Julia Hagedorn looks at a junior school's team taught timetable. But Beverley Shaw (right) questions the Inspectors' prerogative to declare what is 'good practice'.



Top juniors are streamed for some subjects and given 30 minutes' homework three times a week at Barnehurst junior school in Bexley, Kent. In addition, maths, English, geography, history, physics, chemistry, biology, French studies, and craft, design and technology are all on the top juniors' timetable - yes, timetable. So are study skills, PE, swimming and music.

It is ironic that this state of affairs grew out of an attempt to introduce Ploveride ideas on team teaching. But the headteacher John Evans, admits Sybil Camsey, who has shared the top year with Julie Crichton for the last six years, has gone "way beyond the ideas I put to her at the beginning".

It has all evolved gradually. A mixture of numerical problems and staffing reorganization led Sybil Camsey to propose that if the door was removed from between two classrooms she could have all 56 top year juniors in one class, as it were, with help from Julie Crichton part-time, the head, a former parent and a student. That first year proved so successful that Julie Crichton became full-time the next year, and the two have been teaching together since.

The top year works as one unit divided among three intercommunicating classrooms. Pupils see up to eight teachers a week. The children are in charge of their own work assignments and learn to be in the right place, at the right time, with the right books - as if they were at secondary school. Indeed, the top year's course is known as the "secondary school survival course". As the head puts it: "We are aiming to bridge the gap between informality and formality."

Sybil Camsey has always been interested in the problems of primary/secondary liaison, and ran an after-school club (which is still extremely popular) where the top juniors could meet past pupils up to the age of 14 and get to know about their secondary schools.

The "survival" course has three priorities: to develop the children's ability to organize their own work; to introduce them to the research and study skills needed at secondary school; and to give a good foundation in basic subject areas. Children have to learn quickly where they must go for particular classes, but no movement is allowed during the formally conducted lessons. They are expected to sit still and listen.

At the beginning of the year, each child is issued with a record book. Into this goes the term's timetable, which has blanks for independent study periods which the child fills in for himself, and the weekly assignment sheet. It is up to the child to copy down his or her own assignments each week from a board posted up in each classroom.

The work is divided into 40 periods of which 25 are taught or supervised time and 15 are for independent study when assignments are finished.

Two of the rooms act as home base for the children so that they still have the feeling of their own desk and their own teacher. About half their



time is spent in the home base. The groups of 10 to 14 children for maths, English and reading are based on ability, but all other subjects are taught in mixed-ability grouping: usually with the year divided into halves.

Subject-based teaching has crept in gradually. At first, topic work was split into history and geography. This year there was a science specialist on the staff so the timetable expanded to include physics, chemistry and biology.

When working as a team like this, certain teachers are, or become, the acknowledged masters of certain subjects. But at Barnehurst they are careful that this does not lead to a collection of specialists who teach only their own subject.

Study skills are treated as an important part of the curriculum. Children are taught how to find information, distil and use it. They quickly learn to put their new skills to good use. One boy told me that his note-taking was now so expert that he could get everything down during the science lesson, thus pre-empting his homework.

Both head and teachers feel now that topic work was not stretching the children sufficiently. Their work was lacking in imagination and consisted of huge chunks copied from books. John Evans said children often just did not have the skills to tackle topic work in any other way.

"We were giving them the tools but not teaching them how to use them," he said. Some children were unable to use a dictionary at the age of 11 because each teacher assumed that to have been taught by another.

Sybil Camsey emphasizes that it is still important to be a class teacher first and a specialist afterwards. "We are trying to be all things to all people." But she agrees with the head that when maths or geography or history is treated as part of topic work, the children miss out on important areas.

There is a certain amount of panic at the beginning of the year among the children. Will they be able to get all their work done for that week? Will they be in the right place for maths? Which books should they take home? But by half-term most have settled down and those that haven't are given further help.

They seem to thrive on their new regime. I visited during the summer term when many top juniors are bored with their primary schools and looking forward to the secondary school. Not at Barnehurst. The children were still hard working and enthusiastic about their new subjects. They liked knowing at the start of each week exactly how much they had to cover and being able to organize their own time.

"It's exciting. We never used to do so much work. You have a wider range of what you can choose from - it's not all English and maths," said one. "It is hard at the beginning but you get used to it," another thought. They even seemed to enjoy the homework they have to do: 30 minutes three times a week.

Nor does streaming worry the children. For some it comes as a relief that they can work at their own pace; others need the competition and contact they get in a small group of their own ability level. The slower readers have fewer problems when working in this way since they are learning to read for specific purposes. "The pressure is taken off them", the head says.

Obviously, this course removes much of the worry about secondary transfer. Children learn to adapt to new groupings, new teachers, new subjects, and to following a timetable within the security of their own building.

Barnehurst is in an area where there is still selection at 11. The percentage going on to grammar schools has remained the same, however, but about half go on to the "bilateral" local comprehensive, Erith, which has a selective stream. Children from Barnehurst tend to move quickly into that stream in their first year.

Questionnaires among former pupils and their parents show that approximately 90 per cent are in favour of the top year way of working and feel that it has helped with secondary transfer. One mother wrote: "In his final year, we saw a little boy mature into a thoughtful and sensible young man and we are sure that this was as much to do with the system as nature."

The advantages for the teachers are those of any successful team teaching: an end to isolation, a sharing of problems, the possibility of uninterrupted small group for individual teaching. Barnehurst has shown that specialist teaching can be integrated into a primary school day without losing the strengths of a caring and committed primary attitude.

Mr Geoffrey Elsmore, Chief Inspector for primary education, has been telling teachers that ideally every primary school should have nine teachers for the nine subject areas now considered by Her Majesty's Inspectorate to be the compartments into which current knowledge skills and concepts may be fitted (TES September 28). He added, reassuringly, that what was being advocated was simply "good practice already existing in good schools".

"Good practice" has an innocuous ring to it; it's not an expression of an airy-fairy ideal because it already exists in good schools somewhere. This does make it more difficult to challenge or reject. We can't attack it on the principle that however good in theory it won't work in practice. We know it works: we've been told so by an inspector.

Yet how do we know they've got it right? It cannot be that they take the word of the teacher or the school. Don't we all claim - at least in public - that despite our lack of total perfection we are exemplars of good practice, within, of course, the limitations of resources, personal and material? The inspectors must have some better way than this.

Neither does good practice signal itself by golden rays or shafts of light. There must be some element of judgment here, so that such practices may be marked down as being good. But what directs the exercise of judgment so that practice may be seen as good?

Intuition may provide the solution. We observe different practices and intuit that some are good practices, others diabolical, and many others tediously ordinary. But is intuition a good or sufficient guide? Intuitions about practice may help initially, but are they enough in themselves? Intuitions are difficult to articulate, to put into words as explanations and justifications. They may vary from day to day, depending upon the weather and the state of our liver.

Intuitions are probably formed in early life. Perhaps this is why intuitions are shared by people with similar upbringings. What is intuitively right or wrong to the miner in the pit village might not be intuitively felt by the public school gent in Whitehall. If we don't share the intuitions of others we don't see things as they do. We can't then agree on good practice.

## What's the good?

Alternatively, good practice may be determined by criteria established by the observer prior to observation. What counts as a good batting performance before a pace attack at the Oval rather depends on what we believe makes up such a performance. And views can differ on this.

Thus we do sometimes require to distinguish between what counts as good performance, and what may be judged a good performance given our criteria. Generally we happily muddle all this up, for as with our intuitions, we may agree over what makes a good performance.

When it comes to schools: do we agree all that much? If we don't, then we may want to know more about what is to count as good practice.

As the philosopher, Sir Karl Popper, has demonstrated, what we see in part depends upon our preconceptions, our theories of what is there.

If "good practice" in schooling, as in other things, depends upon our theory, or viewpoint, on what constitutes good practice, then let us consider that theory, or notion. The fact that some teaching by some teachers may exemplify such notions is helpful in so far as it may show that what is being proposed is also workable (by some teachers in some schools). This fact, however, is not in itself a sufficient justification or rationale for the proposal in question. "Good practice in good schools" is not enough.

Beverley Shaw is a lecturer in education at the University of Durham School of Education.



# GIVING IGNORANCE A BAD NAME

There is no evidence that educational disadvantage keeps working class children out of higher education - they are just not interested, James Murphy argues.

For all the efforts of Conservative and Labour governments, the average under-graduate still has a father who is a good deal richer and a shade whiter than the average British 'dud'. In this respect, little has changed since 1944 - the middle class still monopolize higher education.

Though many reformers now concede there is probably little that can be done to change the situation, few regard it as acceptable. Like the uneven distribution of wealth, the uneven consumption of education is, for most of them, a bleak testament to inequality and injustice. So it is easy to see why the reform establishment has been celebrating 40 years of the 1944 Act with only muted enthusiasm.

What is not quite so easy to appreciate however, is why would-be reformers persist in taking such a dim view of class differences in education; why, they still regard them as unfair and unjust? For despite its widespread appeal in reformist circles, the dismal view that class differences in the uptake of education are due to inequality rather than choice has come unstuck every time it has been tested in the past 40 years. Indeed, it is a view which so badly fits the facts of recent educational history that it is difficult to muster even a single piece of corroborative evidence in its defence.

Up to 1944, the belief that class difference in education was unfair, was difficult to resist. There were glaring inequalities between the classes in the form of fees. With the exception of a small number of free places, secondary education for most children depended on having rich parents.

In the absence of clear evidence to the contrary it was small wonder that most reformers confidently assumed that the under-representation of the poor was in a large measure, the consequence of this blatant inequality. There were indicators, however, even in those days, that factors other than fees were responsible. Half of Bradford's 'free-places', for example, were declined each year by successful working class scholars.

Butler's Education Act in 1944 abolished fees for secondary education and established grants for higher education. This soon made it clear that, as a cause of class difference, rather too much had been made of fees.

Their abolition had undoubtedly made the educational system fairer, but contrary to what every reformer since Tawney had believed, the removal of this notorious inequality in no way affected class difference. Instead of withering away as a generation of reformers had confidently assumed, class difference in education prospered much as before: the working class remained every bit as under-represented under the free system as they had been under its less equitable predecessor.

predecessor.

For the first time in educational history it was clear that something was badly amiss with this most cherished of reformist beliefs.

But while the sceptic might have then wondered if the working class were actually all that interested in extending their education beyond the statutory minimum, the reformer still continued to emote about the inherent unfairness of it all. Unabashed, one reformer after another simply asserted that other inequalities were now at work. In what was, in retrospect, a quite remarkable triumph of faith over fact, the blame was shifted to a set of inequalities whose only

particular appeal in America. In black and white schools, this defect was patent for all to see. However, it was a view which was badly mauled 20 years ago by the Coleman Report commissioned by the American Government to investigate why the average black pupil fared less well than the average white pupil.

At the time, most commentators including the report's senior author, James Coleman, confidently predicted that the investigation would merely confirm what everyone knew all along - namely, that these inequalities in input (to use his terms) were responsible for differences in output. As things turned out, the report found dif-

Coleman he freely admits that the working class "are less likely to want to go to college".

Meanwhile back in Britain, the reform establishment was knocking seven bells out of 11-plus. In 1966 the then Minister of Education, Anthony Crosland, dropped a line to the local authorities informing them that it was "the Government's intention to end selection at 11, and to eliminate separatism in secondary education".

In egalitarian terms, Crosland's decision to scrap selection at 11, was difficult to fault. It had long been known that the more affluent the area the more grammar school places there were.

While some areas made provision for up to 50 per cent of the relevant age-group, others catered for no more than 10 per cent. And there was increasing evidence that a disturbing degree of unfairness was embedded in the selective procedure itself. Not only the 11-plus, but also what the 11-plus tested, was found increasingly to be contaminated by cultural and social influences.

However, for all its apparent unfairness, it is now equally clear that the eradication of this inequality has not had much of an effect on "separatism in secondary education". The passing of the 11-plus has not got the working class massing at the university gates. For the second time in British educational history, the much-hoped-for working class breakthrough conspicuously failed to materialize.

It could be, as the reform establishment was quick to insist, that other inequalities were now preventing the working class from getting an expensive education. Alternatively, it could just be that, like Princess Anne, the working class have neither the time nor the inclination for "this much over-rated pastime".

For the reform establishment however, there was no alternative, even though social observers and liberal reformers like Orwell were well aware that "not one working class boy in a thousand does not pine for the day he would leave school".

But while the existence of other inequalities might explain why the working class failed to appear in the numbers expected, it does not explain why in recent years the proportion of working class student at university has actually declined in real terms.

This is a particularly awkward fact for those who lament the unfairness of class difference. For it implies that the educational system has, despite the spread of comprehensive education, become more unfair in recent years. Indeed, short of suggesting that comprehensive education is a more perniciously unfair arrangement than its tripartite predecessor, reformers must now suppose not just another inequality, but an inequality whose effect on

## 'One pupil's education is another's incarceration'

commonality was that they were not as striking or as obvious as fees. As one of the most popular slogans of the day confided, "school fees have been removed only to reveal subtler biases at work".

Of course, once the matter was seen in this light, once it was divined that inequality was in fact responsible for class difference, all that the reformer needed to do was to hunt down some of these covert biases: demonstrating that these inequalities actually had an effect on working class performance, strangely did not matter.

In the search for covert bias, no characteristic of the educational system or attribute of the school was above suspicion. Everything from the ambition of the school to the expectations of the teacher; from content of the curriculum, to the number of books in the home; from the way education was organized nationally to the manner it was administered locally, were all seen as detrimentally affecting the academic progress of the working class pupil.

All in all, what counted as knowledge, how it was financed, presented and distributed was seen as crucially affecting a situation where the most advantaged ended up the most educated as well.

As with fees the main difficulty with this otherwise impressive catalogue of covert biases, is that not a single one of these inequalities appears in retrospect to have actually had much of an effect on working class under-representation. True, there can be no doubting that many of these perceived causes of class difference in education are blatantly unfair. But, that said, on those occasions when it has been possible to check these various explanations, not even the most plausible stand up to more than passing scrutiny.

A close relative of the pre-war view of fees was the notion of an "education deficit". This was

ferently. True, inequalities in funding existed - black schools typically had fewer facilities than white schools. However, it was also discovered that such inequalities, apart from being much smaller than everyone thought, explained very little of the difference in output which existed between black and white schools.

On Coleman's calculations no more than 10 per cent of this difference in achievement could be attributed to this particular inequality. For the second time in educational history it was clear that the reform establishment had over-estimated the educational significance of educational inequality.

However it was not until 1972 and the publication of Christopher Jencks' book, *Inequality*, that the true educational significance, or rather insignificance, of unequal funding became widely known. Jencks found "differences between high schools seem to explain about 2 per cent of the variation in students' attainment".

The bad news was out, again, but strangely no-one, not even Jencks or Coleman, took it seriously. Though both had laboriously demonstrated that this conspicuous inequality was not a major cause of class differences in education, both nevertheless slavishly followed convention and dismissed such differences as unfair.

Indeed, in this regard Coleman was ahead of the pack even though his own report well demonstrated that the main reason for class differences in educational representation was the differences in educational aspiration of social classes.

Even the heretical Jencks bent the knee; he like everyone else in Academia was in no doubt that such differences were unfair and unjust. He fancied that it had something to do with unequal funding, but he was wrong. It was not the unequal funding, but the unequal aspiration, that was the

working class performance is manifestly greater than the effect once attributed to the 11-plus.

Like class difference, sexual difference in education, particularly in higher education, has long been condemned as unfair. Unlike class difference, however, the differences between the numbers of men and women in higher education has declined dramatically in the past 20 years without any noticeable change in the way girls are treated by the educational system.

So not only must the reformer live with the fact that, class differences in education increased despite the eradication of some notorious inequalities, but that the participation by young women in education has increased dramatically without the removal of any obvious inequality. In the circumstances, it is perhaps time this belief in the unfairness of class and sexual differences in education was killed off.

Old beliefs, however, die hard and this one is evidently no exception. Instead of declining with age and adversity, it has blossomed as it has become less able to explain the facts. Nowhere is this more evident than in those many attempts to explain racial differences in achievement.

While racial discrimination is endemic, racial underachievement is not. The awkward case here is the Asian minority who, for all their troubles, have quite the best educational record of all racial groups. As the Rampton report noted, 13 per cent of Asian school-leavers manage to get one or more A level compared with 2 per cent of West Indian leavers.

In terms of the "discrimination-causes-under-representation" thesis, this ought not to have happened since both minority groups presumably face much the same racist world. Of course, it is possible that like so much else in the world, prejudice varies from one racial group to another. As such it is arguable, perhaps, that Asians experience less hostility and prejudice than the West Indian minority.

It is an argument however, which is, in this instance, hardly worth making. For not only do Asian children do better than West Indian children, but they also happen (depending on what statistics are invoked) to do as well or better than the white majority. As Rampton noted, but subsequently ignored, 13 per cent of Asians compared with 12 per cent of all other school-leavers, left with one or more A level. Or, alternatively, as the official *Employment Gazette* of October 1983 indicated, 15 per cent of employed Asians were qualified at degree level compared with 10 per cent of whites.

Even allowing for the lack of precision in these figures, one thing is abundantly clear - the Asian minority are doing rather too well to justify the view that racial differences in education have their origins in discrimination and prejudice.

None of this, of course, means that racial discrimination does not matter: what it does mean, however, is that as long as the reform establishment persist in taking racial differences in achievement as a measure of racial discrimination in education, it will find it hard, on these figures to argue that the educational system discriminates against Asians in favour of whites.

Before the reform movement loses all credibility, it needs to become a shade more circumspect and stop assuming the only reason different classes and groups have different educational profiles is because of discrimination. It is time to take seriously the possibility that taste for education, particularly for large doses of it, differs from class to class and group to group.

This is something the reform establishment has never once done. For some reason, personal vanity or professional self-interest, the educational reformer has always started by assuming that no-one in their right mind would willingly forgo an expensive education: that at base, the working class were as bent as the middle class on celebrating at public expense.

Given such intellectual prejudice, it is perhaps not surprising that educational reformers have long agreed with Halsey, that "the essential fact of twentieth century educational history is that educational policies have failed". The truth is that educational commentators have failed to see that one pupil's education is another's incarceration. And in so doing have failed to see that, in making education fairer and higher education bigger, they have succeeded only in indulging at great public expense those of an academic disposition.

It is not to continue, the next 40 years must start by looking not to even up the class consumption of education but to even-up the distribution of public monies between those of an academic disposition and those not so inclined on the improving book.

Such a measure would no doubt involve some considerable contraction of higher education, but it might just put paid to that preoccupation with education, which has for the last forty years, served only to give ignorance a bad name and the ignorant a bad life.

James Murphy is a lecturer in educational research at the University of Lancaster.



# FIFTY YEARS ON

Howard Sharron reports on the first half century of Birmingham's unusual Parent and Child Centre

The panic over child abuse of the seventies now seems at last to have run its course. Parents are gradually winning greater legal safeguards over their children and social workers and educationists are looking for a more sophisticated understanding of the tensions within the family. Which is, perhaps why Birmingham's Parent and Child Centre, a remarkable institution celebrating its fiftieth anniversary this year, seems to be experiencing a new glow of official approval, after years of facing-out the axeman.

The centre was founded in 1934 by the Birmingham City public health department, one of the most far-sighted in the country. Its aim was to offer parents advice and support in coping with "difficult children". It was to complement the work of the education department's Child Guidance Clinic, working with preschool children, and acting as an extension to the mother and baby clinic already in operation. The desire for comprehensive provision for children, and the strong emphasis on early intervention and prevention of later health and behavioural problems, were typical of the ideology of the dynamic public health departments of the day, which has sadly never been matched by the National Health Service, social services or education departments.

The Parent Guidance Clinic, as it was then called, had a profoundly different approach to child care than do our modern social services. As the name suggested, the emphasis was on assisting parents to control their wayward offspring: as a general explanation, the notion that parents were to blame simply didn't apply. The clinic dealt with a wide range of problems which included sleeping difficulties, tantrums, and poor eating habits; the normal run of problems that could be expected to trouble families in all classes.

A fundamental principle of the clinic was that attendance and treatment were at the parents' discretion. The heavily coerced client classes created by modern social services departments were still a thing of the future.

The log book of the clinic in those early days shows a complete lack of the perjorative value-laden terms such as "inadequate", "immature", and "deprived" so readily dispensed by social workers now. Inexperience and poor education were the most common faults of parents and the clinic, in the early days staffed by health visitors with later involvement from psychiatrists and psychologists, set about remedying both in a practical non-judgmental way.

The log also gives a fascinating insight into the no-nonsense view of child rearing of the time. In response to the main problems of "highlighted or

negative behaviour" or "nervous excitability" (tantrums) or sleeplessness and bedwetting, the staff advised parents not to over-indulge and over-stimulate their children and to be "more consistent in their use of physical punishment".

"The most significant aspect of the clinic's and later the Parent and Child Centre's work was that it has always seen child development in the context of the whole family," says Andrew Sutton, a Birmingham education department psychologist, who acts as a consultant at the centre.

"There has been tremendous pressure in recent years to automatically view parents as guilty, and the children as victims. There might be cases where this is true, but I have never seen one. Usually a problem establishes itself in a child's behaviour, for all sorts of reasons, and the child then becomes a very important actor in the family's troubles. Some children are little buggers who would drive any parents to distraction.

"If, however, you went now to a social worker

Counsellors help mums and dads to step outside the conflicts with their children



saying your child just won't sleep or keeps wetting his bed it would probably not be considered a social work problem because it didn't fall within their child-abuse brief. Or you could easily become identified as an inadequate parent and processed through the child abuse system which now sucks up all sorts of people that would have never been involved with authorities in the thirties. But the fact is that child abuse is only a very small part of childhood problems that, but for the centre and a few places like it, would be ignored.

Polly Feather, a senior social worker at the centre, says: "We start from the basic assumption that parents have got the business of bringing up children pretty well sorted out, and that they know themselves and their children better than we do.

"Sometimes however a combination of events can occur which cause parents to get 'stuck' in an impasse with their children. A new baby can arrive and deprive the parents of sleep at the same time as an older child goes through a difficult phase. As a result, there might be an escalation of bad tempers and the parents might lose control. Given the right circumstances it could happen to anyone.

"We help parents to unravel the events and tensions that have gone into making their crisis, to see what strategies for coping would be most effective. Usually the parents suggest the strategies themselves once they have been helped to step outside of the conflicts and to stop blaming themselves.

"Many of these strategies involve encouraging the parents to take their children on; to stick up for themselves and look after their own needs, too. But we never advise parents to do something they would find very difficult. If they can't bear to listen to their child scream at bed times we try to find a different route.

"A typical case might involve helping parents to analyse how a tantrum developed and showing how the child can be diverted before the child blows up. Once in full swing parents might be encouraged to take a stand and put the child out of the room until he or she stops.

"It all depends on the circumstances and the family situation and what has been tried before and failed. Generally, we are very sceptical about the new dogmatic theories about child care put about by professionals."

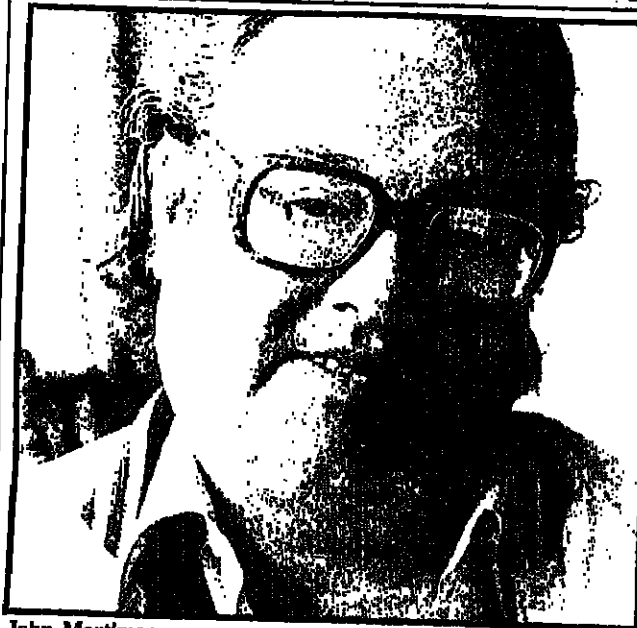
Research carried out by Birmingham University's department of social administration and social work found that the majority of cases dealt with by the centre had a successful outcome. Parents were full of praise for the service they received.



# Review

## PERSON TO PERSON

by Edward Blishen



John Mortimer

In Character. By John Mortimer. Penguin £1.75. 0 14 00 6389 7.  
In the Psychiatrist's Chair. By Anthony Clare. Chatto and Windus £9.95. 0 7011 2793 7. £4.95. 2837 2.

As a man who makes part of his income by conducting radio interviews, I am ruefully aware of the shadowy status of those who engage in this activity. The general expectation is of an encounter with a bullishly gifted in the fields of arbitrariness, shallowness, inaccuracy and misrepresentation. It can't all be put down to insecurity on the part of those interviewed. In the years since 1869, when the *Shorter Oxford* says the word was first used in this sense, the interview has not on the whole been a notably sensitive art. So in demonstrating, in quite different ways, how penetrating and enlightening an interview may be, these two books must raise the spirits of any practitioner made gloomy by such thoughts. The difference between them is great. Mr Mortimer seems rather to happen upon his subjects than to have made appointments with them. He is quite often in their kitchens: he does not demur when they offer him unexciting beverages. He makes himself at ease on a number of humble surfaces. He listens. These are interviews in which you hear Mr Mortimer listening. It is something to do with the skill (a playwright's, of course) with which he presents the things his subjects say—especially their soliloquies. The real occasions must have been far less neat. But there's no suggestion of confused life being tidied up for the sake of the word limit imposed by the

*Sunday Times*, for which all but two of these pieces were written. In three or four pages—a soliloquy or two, one or more exchanges, some local colour, a scattering of details that add up to a deft short life of the subject—Mr Mortimer presents the man or woman he's interviewing, while leaving him or her properly mysterious. Each portrait is a sort of lucid puzzle. As an example, his presentation of the Archbishop of Canterbury: a model of how to suggest an indeterminacy typical of many human beings, but rarely rendered in an interview. He catches at the element of the soldier still strong in the Archbishop's character, and, answers to religious questions having been remarkably non-committal, says: "From [ex-Lieutenant Runcie's] commanding officer, a great deal of 'No comment'." He knows what a thin thing it is, sometimes, to be an interviewer: Angela Carter causing him to reflect that "the interviewer is helpless in the face of true writers". He values unfashionable qualities: of Catherine Cookson and Dick Francis, "They are both good people, writers whose reactions to the world are consistently decent, tolerant and humane". He is also unfashionably grateful: of David Hockney, "It is a privilege... to have him with us". If something other than gratitude is felt, the portrait is done with a useful wry astonishment: as with the Chief Constable of Greater Manchester ("He had the look of deep and complacent satisfaction which men assume when they speak of having been beaten in childhood.") And of course he is often very funny: as when he detects in Malcolm Muggeridge "the sort of radiant happiness that comes only to those who believe that Western civiliza-

tion has collapsed, and that their life's work has been trivial and unsatisfactory". Both men appear on the covers of their books. Mr Mortimer looks stokeally amused: Mr Clare handsomely frowns. His is an intense book: it displays the interview as a species of psychological hunt meeting. It isn't the subjects who are pursued, but certain issues of deep interest both to them and to the interviewer: "What drives, sustains and motivates people through their lives, how they survive setbacks, and if and how they cope when disaster does occur." Another image: the interviewer provides each with a wind tunnel, in which they have agreed to endure searching, but not destructive, tests. Mr Clare was not entirely easy about the title under which the interviews were originally heard on Radio 4. The subjects "were not patients. They did not bring problems, and the process involved was not therapy". Given less glib material, there might have been tears. But here are characters either used to being (or professionally eager to be) shaken, startled, besieged, or, in two cases, dedicated to the pursuit of invulnerability. Every interview comes up with something that's not banal or bland and on the other hand is clearly not said merely to amaze. Glenda Jackson thinks she'd not be an actress if she hadn't been a plain adolescent. David Irving believes that "running a family is rather like running an army" and regards his marriage as "an unnecessary devotion". Arnold Weaker is proud of a difficult achievement, "having put together a good family"; and adds an interesting thread to the pervasive discussion of the arts and chances of survival in saying: "Inside all of us there's someone waiting

to give up". One's able to sense, as it were, the different postures the interviewees adopted in relation to the questioner. Professor Hugh Dudley, I imagine, sat sideways: he is wonderfully candid and surprising on the skills and character of a surgeon. He hovers over the question whether there is an element of sadism in the surgeon's make-up. There are, throughout the book, some notable hoverings. "My list", says Mr Clare, "quickly included a judge and a surgeon, for the mainstays of decisiveness, authority and power interest me". The judge is the Buddhist, Christmas Humphreys, recorded shortly before his death: fascinatingly we share the road that leads Mr Clare to his conclusion, "The Buddhist way of life complements his detached posture. It did not create it". There's a curiously shoulder-barging sort of interview with Peter Marsh, "thrusting, dynamic, successful, aggressive entrepreneur", who seems to have set out to remould entirely the self he was given ("Most of us," Mr Clare observes, "are content to make a few minor alterations"). The interviewer being astonished by his subject's use of the word "chaos". "Chaos! Chaos for you covers everything from the collapse of your empire to a lady ringing up asking whether she should wear a long dress rather than a short." In some ways the most frustrating interviews are with triumphant casualties, Spike Milligan and Neil Dunn: both of whom have gifts that may rest on the impossibility of their being satisfactorily interrogated. But it's altogether a busy, lively book that can't fail to be of interest to anyone concerned with the dilemma of human design.



Anthony Clare

## Successive selves

by Brian Morton



Another Self. £2.95  
Ancestral Voices. Prophecy Peace. Caves of Ice. £3.95 each. By James Lees-Milne. Faber & Faber

The National Trust drafted its constitution in 1895: 47 years (and four Acts or Parliament) later, it had a membership of 6,000 and a regular staff of six, one of them the young James Lees-Milne. He had been drawn to the Trust almost perforce and on the rebound from a disastrous job at Reuters. In the early 1940s, the architectural heritage was in danger as never before, victim not just of the Luftwaffe—and later the pilotless V1 and V2—but also of the casual vandalism of billeted soldiers. (Waugh's *Brideshead Revisited* begins with such scenes.) As an undergraduate, Lees-Milne had watched well-bred young men in their cups hacking at Reynolds portraits and shooting at statues with rifles during a private party at Rousham. It was difficult to hate the Nazis wholeheartedly when Oxford men seemed bent on the same destructive end. In any case, Lees-Milne's military career had been less than fire-eating.

In October 1941, while still in uniform, he had picked himself out of the rubble of a blitzed house in Hyde Park Square. The shock undermined his health and induced a case of Jacksonian epilepsy, borne bravely ever since. Invalided out, he returned to the National Trust, which he had first joined in 1936, as adviser on historic buildings. The record of his travels round the country houses of England (with forays into Scotland and Ireland) is in his three volumes of diaries, the first two covering the war years, *Caves of Ice* the bitter first years of peace, marked by exhaustion, continued privation and the beginnings of a new, cold war.

It is easy enough to accuse Lees-Milne and his colleagues of languid fiddling while London burned, harder to recognize now the enormous amount of work done under the most difficult and dangerous of circumstances. The National Trust has always opposed the "museumization" of any of the buildings under its care, insisting that they remain in a condition as close as possible to original private ownership. Architecture creates the most exclusive of freemasonries—bound together by jargon: "soffits", "apses", "herring-bone nogging"—yet Lees-Milne seems less interested in the houses than in their occupants, the ancestral voices, quirky, often downright eccentric, increasingly strained. In the autobiography *Another Self*, he likes to appear tough and cynical. Stationed as a soldier in Kent he watches the guns at Cap Gris Nez launch shells at England: "I was far more worried by the loss of the old buildings of Dover than the lives." Yet every indication in the journal is towards a personality of great warmth and sympathy. Diaries, by nature "spasmodic and prosaic", are by no means the best guide to the author's true character. They offer a better impression of his companions, however filtered such impressions are by mood, health and circumstance. Lees-Milne detested "society". His friends were brilliant rather than glittering: Emerald Cunard (emphatically not her daughter Nancy), Ivor Compton-Burnett and her companion Margaret Jourdain, the English furniture specialist; Harold Nicolson and his brothers; Nancy Mitford; and, closest of all, James Pope Hennessy, who was brutally murdered in 1974.

The theme of *Another Self*, as the title implies is the dissipation of identity: from the fantasies and self-dramatizations of youth to the outrageous self-flagellations of age. The prevailing sense is of the author looking down on his young self from a

great height, a sense that may owe as much to Lees-Milne's epilepsy (of which such sensations are typical) as to a more conscious autobiographical irony.

The book creates a convincing drama of the conflict of ideals and reality. Lees-Milne declares himself, by default, an anarchist. His hatred of Nazism is topped only by a morbid dislike of Communism or any other regimentation of social life. His strictures on the young—coloured forever by the scene of Rousham—are harsh, almost blimpish: "unqualified... marching, smashing telephone kiosks, stubbing cigarette ends in police horses' rumps, sitting in, lying in, renouncing soap and water, stinking to high heaven and looking like gorillas". Nothing, notice, about drugs or sex, loud music, the usual bugbears; the greatest offences are against aesthetics or individuality; the greatest sin willing submission to the mass.

However passionately Lees-Milne means all this, it never quite outweighs his obvious sympathy or his literary sense. *Another Self* is as well written as a novel, brilliantly structured and paced. The final chapter, "Mars Ullor", is a masterly set-piece containing an unforgettable description of London after a fire-raid and an account (worthy of Elizabeth Bowen) of a love affair that somehow could only have happened in war-time. War conditioned the life of a generation. Lees-Milne watched Zeppelins as a child, dodged V1s as an adult. Like most of the best books about war, *Another Self* is not about actual combat. Its greatest perception, one that runs through the diaries, is that destruction is rooted in mass society, "allies" and foes alike. Its lesson is that the past remains present in people and places. Ignored, it will be destroyed or, no better, consigned to the museum.

## Farm life and farce

In the Shadow of the Glen. By J M Synge. Cafe Theatre Upstairs. Tramway Road. By Ronald Harwood. Lyric Theatre, Hammersmith. Two Into One. By Ray Cooney. Shaftesbury Theatre. Rough Crossing. By Tom Stoppard. National (Lyttelton) Theatre. The Hired Man. By Melvyn Bragg and Howard Goodall. Astoria Theatre. Fire-Eaters. By Paul Copley. Tricycle Theatre.

In the Shadow of the Glen, Synge's first play, is a minor masterpiece of Irish drama. Shocking in 1903—Synge's refusal to sentimentalize the peasantry led to riots—it now seems quaintly poetic, gently amusing. Locked in a loveless marriage, Dan Burke tricks his wife Nora into thinking him dead. By this ruse he learns of her waywardness with Michael (a young herd) and loses her to a passing tramp. The drab existence of Wicklow farm life is underlined in Jackie Bitton's penny-play, a minor masterpiece of Irish drama. Shocking in 1903—Synge's refusal to sentimentalize the peasantry led to riots—it now seems quaintly poetic, gently amusing. Locked in a loveless marriage, Dan Burke tricks his wife Nora into thinking him dead. By this ruse he learns of her waywardness with Michael (a young herd) and loses her to a passing tramp. The drab existence of Wicklow farm life is underlined in Jackie Bitton's penny-play, a minor masterpiece of Irish drama. 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# Footnote

Your Move. A New Approach to the Study of Movement and Dance. By Ann Hutchinson Guest. Gordon and Breach £30.00 and £18.50.

The National Inquiry into Movement Notation chaired by Professor John Blacking of the Queen's University, Belfast has begun to write its report after two years of study involving many of the top notation specialists of Britain, the USA and elsewhere.

They confirm things we know already like the widespread use of notators by dance companies around the world and the firm establishment of notation as a profession in its own right. More important, though, is the emphasis on what notation could do in fields as far apart as anthropology and physical handicap, education and leisure provision if only it was better understood.

Ann Hutchinson Guest's *Your Move* demonstrates these possibilities in the notation sense, concentrating on the detail of actually translating movement into signs and symbols on a page, providing also a comprehensive set of exercise sheets. Thus, in the author's words, it seeks to provide an "introduction to movement exploration... a way of looking and learning about movement which, to our knowledge, has never before been published."

A portrait emerges of dance as stiffness, travelling, jumping, flexion, extension, rotation, balance, relationships, directions and dynamics. What is missing is the wider picture of movement as an aspect of knowledge, a way to penetrate more deeply both individualities and relationships. In this relatively unstudied field notation is a vital research tool and possibly the key to a treasure house of knowledge communicated and assimilated non-verbally. For this reason the development of movement notation may come to be seen as among the most significant discoveries of the twentieth century with Ann Hutchinson Guest as one of its great pioneers and champions. It is for this reason that the achievements in this every field of human activity. This, I hope, will be initiated by Professor Blacking's inquiry.

Peter Brinson

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## ARTS



## King's evidence

The Trial of Richard III. London Weekend Television production for Channel 4, November 4.

Last Sunday a jury of 12 citizens acquitted Richard III of murdering the princes in the Tower.

According to received television wisdom, a courtroom drama cannot fail to be gripping. And this one had an added advantage - the spice of reality. It was an academic exercise but not one abandoned to the gendemen of the law. Richard's defenders were all amateurs (in the true sense of that word) with Jeremy Potter, one of the instigators of the project and chairman of the Richard III Society, coming over as the best informed and most committed witness.

The trial took place in a reconstructed Old Bailey courtroom, with the former Lord Chancellor, Lord Elwyn Jones as judge. Two eminent QC's appeared under assumed names to comply with the requirements of the Law Society and, apart from dispensing with wigs and the obviously unsuitable (if dramatically familiar) procedure of swearing in, the trial followed all the usual customs of the courts. Except that perhaps one or two witnesses got away with what in other circumstances might have been construed as contempt and that time was not unlimited.

Under English law the defendant is presumed innocent until proved guilty. In this case, academics and folklore alike have assumed Richard, the Shakespearian devil-king - to be guilty. The burden of proof lay on the defence. Their advantage was that the jury, having been brought up on especially well-informed on the subject, would be surprised and perhaps influenced by any signs of a chink in the post-Tudor argument.

It took a full three and a half hours for the intricacies of the case to be laid before us. The disagreement over the "pre-contract" indicates as well as anything the difference between the sides. "A red herring," said Dr Starkey, who was peremptory to the point of rudeness in his response to the defence QC. "The crux of the matter," said Miss

Sutton, a dedicated Ricardian and author of a book on the subject. The defence claimed that Edward IV was legally bound to another woman when he married Elizabeth Woodville, the mother of the allegedly murdered princes. This would have rendered them bastards and given Richard a very persuasive claim to the throne. The only witness to this supposed earlier ceremony was Bishop Beaufort, a person regarded rather differently by defence and prosecution. Was this a trumped-up pretext? Could not "bastardization" be reversed by Parliament in any case? Was it accession (as the prosecution claimed) or something in a coronation ceremony (as the defence would have it) that wiped out all other claims to kingship in the medieval period? This point is crucial since the princes were known to be alive at the time of Richard's coronation.

Others - Buckingham and even Henry Tudor - could have benefited from the disappearance of the princes. Besides, Richard is known to have treated well another nephew, Clarence's son, who might have come between him and the throne. Then there is the North/South question. Richard came from Yorkshire and he and his followers were distrusted in the South, yet there is no Northern chronicle extant to put what might be quite a different view. In any case, contemporary chronicles do not name Richard as the murderer. It is Thomas More, brought up under the Tudors, who does that. Yet Richard *did* wear the crown, *did* have power over the princes and *did* refrain from making any statement as to their whereabouts.

As Lord Elwyn Jones - a benevolent judge if ever there was one - declared, this trial would only stimulate further discussion about this most famous historical conundrum, whatever the result. Meanwhile it had been a fascinating evening. Justifying Channel 4's commitment of several hours prime time television.

A book containing a transcript of the trial and a description of events leading up to the making of the programme is published by Alan Sutton Publishing. *The Trial of Richard III*. By Richard Drowett and Mark Redhead. £5.95.

Heather Neill

## Highland fling

David Self on Radio 3's Scottish season

"Wogan replaced by virtually unheard of broadcaster", whimpered the London press, when it was announced that the megastar's replacement on Radio 2 was to be Ken Bruce - despite the fact that Bruce is one of Scotland's most popular presenters. Ignorance of what is going on north of the border suggests that Radio 3's present Scottish season is particularly timely.

Throughout the month, at the suggestion of its controller, the urbane (and Scottish) Ian McIntyre, it is attempting to show the nation that there is more to Scotland than tartan, booze and Balmoral. Scattered through the November schedules are 45 hours of distinctively Scottish programming, much of it music but also a richer serving of speech than has been the pattern of late. Already two most agreeable plays have been transmitted, both of which have shown that the network is at last developing a surer touch with comedy.

Last Sunday we were treated to *Mr Lynch's Maggot* by Scular Anderson. Chronicling the visit of a fishing party to a fading yet pretentious boarding house, run by the fading yet pretentious Mrs Lynch, it was aurally richer than many a radio drama and deserves an early repeat. Somewhat more demanding but also nicely humorous was Wednesday's play *Ending Time* by John Clifford. Inspired by Messiaen's Quartet for the End of Time, it explored the paradoxes of time by counterpointing the struggles of a BBC producer to write programme notes for a Radio 3 performance of the work with the travels of a musician and his girlfriend. While returning from a camping holiday, they give a lift to a Scottish St John the Divine, himself transposed in time from Parnassus by the Angel of God: "Fear not. I am Omega. I am Alpha." "Ye came in through the door, though." "I am the Door."

Yet to come is Andrew Dallmeyer's *Optim Eater* (Sunday, 8.0pm). Originally presented at this year's Edinburgh Festival (where it won a Fringe First Award), it explores the relationship of reality and fantasy in the story of its eponymous character, Thomas de Quincy. Also worth noting is *Shanidar*, a new play by the Scottish dramatist, Robert Fennell (November 25, 7.30pm). A reporter kidnapped, and interviewed with a harsh realism of his situation is "a fragrance of memory unfolding". A challenging play, it is not to be followed with only half a mind. It deserves to be heard on quality speakers: it is a very, very rich tapestry of poetry, realism and music specially composed by Robert Sandall.

Forrest also has a short story in the season (*Princess*, November 22) which will have to be good if it is to equal the standard set last Tuesday by Ronald Frame's *A Long Weekend with Marlowe*. Proust, an evocative and moving story of a university wife's growing disillusion with her husband's literary preoccupations. While tracing Proust's steps around Normandy he is confronted with a delightful village, and can only say, "Isn't it like Balzac?"

Among the features worth hearing are Allan Massie's talk tonight (7.05pm) on *The Great Scottish Novel* (a lament for what he sees, with some good reason, as the decline of the novel into a "whimsical toy") and *Scottish Canvas*, a survey by Richard Cork of the condition of Scottish painting (November 12, 7.15pm). Finally, two gem-ettes: *The Night Writing Circle and St Andrew*. The former (November 22, 9.10pm) is a farcical monologue for radio by John Byrne (author of *Writer's Camp* and *The Slab Boys*) and is an emotional tribute to the rightly neglected literary, Francis Seneca McDade. *St Andrews* is a 20-minute affectionate meditation by the poet Alastair Reid on the "smallness and ambiguity" of the university town, illustrated by the voices of the townfolk, including the headmistress of St Leonard's Girls' School who recalls the complaints she received when she tried to admit the influence of the Swinging Sixties. "Your gels didn't have gloves on!" hope Scotland doesn't think the poem is only for Sassanachs.

## Early years

The Diddler. Thin Ice Theatre Company. West Midlands H E College, Walsall.

Ray Speakman's new one-man play about the early life of D H Lawrence is based on a memoir by his childhood friend, George Neville, who coincidentally has come into prominence recently as the subject of Lawrence's previously unpublished early novel, *Mr Noon*.

*Diddler*, Lawrence's private nickname for his friend derived from Neville's many amorous adventures, covers much of the same autobiographical period as Lawrence's novel, but from the opposite standpoint, offering a more objective view of the Lawrence ménage and on Mrs Lawrence's exclusion of her husband from the emotional life of his children, especially her favourite son, "Bert". Lawrence's schoolboy exploits, his

unhappy experience at Haywood's Surgical Goods factory, tormented by the bold, brazen girls, and the happy companionship of the Pagans are all traced by Neville in a 75-minute monologue which actor Tony Turner interprets with a sensitivity for nuances of voice and accent, stance and style that briefly illuminates the characters who peopled these early years.

A performance of the play, followed by a talk from Professor J T Boulton on *Mr Noon* and excerpts from *The Tarnished Phoenix*, read by Gabriel Woolf and Rosalind Shanks, form a one-day Lawrence programme on November 21 at the Readers and Writers Festival, Midlands Arts Centre, Birmingham. The play is available for performances in schools and colleges until late next spring. Midlands Arts Centre, tel: (021) 440 421.

Ann FitzGerald

## After Dickens

Great Expectations. By Charles Dickens. Royal Exchange Theatre, Manchester. Until December 8.

A short novel for Dickens it may be, but this staging runs over three hours. Yet this should put no one off, for despite a certain imbalance in forces (no dramatist, four directors), this company adaptation is a successful piece of story-telling, and manages to make a number of points besides.

These mainly surround our attitude to Pip, and should give rise to discussion. A set of theatrical shocks punctuate and heighten the narrative track and only the arrest of Magwitch on the Thames shows the stage's limitations. The acting is always on the good side of competent, though only two performances significantly transcend that rather lukewarm recommendation. Nick Spragg's Magwitch combines roughness with a sympathetic optimism that clearly disturbs Michael Muller's efficient Pip. As Joe Gargery, Trevor Cooper shows the kindly uneducated craftsman, but one who is also capable of deep feelings that can find expression only in vocal explosions. It is a fascinating and entirely unpatronizing interpretation.

Timothy Ransden

Best Radio Plays of 1983 (Metropolitan BBC £8.95) offers an annual chance for readers to catch up with - or enjoy at leisure - radio drama's finest output. This crop comes from Wally K Daly, Shirley Gee, Gerry Jones, Steve May and Martyn Read. No More Carried Eggs For Me, compiled by Roger Wilent (Metropolitan £1.30) presents lighter fare, consisting of classic comedy sketches from Goggin and Beyond the Fringe as well as from Monty Python and Morecambe and Wise.



## Travellers' tales

John A Brune on an accessible new guide to the Romani language

Romani Rokeripen To-Divvus - The English Romani Dialect and Its Contemporary Standing. Edited by Thomas Acton and Donald Kenrick. Romanestan Publications 61 Blenheim Crescent, London W11. £5.45. 0 947003 00 9

"Kai shanes ke divves?" (Where were you today?) "Pre o panini" (On the water) "So ulden?" (What did you catch?) "Uldom kushi mutchi" (I caught some fine fish) "Bahre eks?" (Big ones?) "Awa" (Yes) "Bikkenom ten soar" (Sure I sold them)

These are the first few phrases of a conversation in Welsh Romani recorded by Peter Kennedy in the 1950s. The speakers were Manfri and Hywell Wood of Bala. In a three-minute conversation only three anglicisms occurred: "eks" for "ones", "soar" for "one" and "feth" for "faith". The rest was all old grammatical Romani, which is closer to Sanskrit and Prakrit than any modern Indian language. Romani has eight cases (nom., voc., acc., gen., dat., prep., instr. and abl.) and many, many declensions. The Welsh Romani dialect is the most

archaic known form of the Gypsy language and certainly one of the most ancient languages still spoken in Western Europe. Only a few dozen speakers survive. A grammar, John Sampson's *Dialect of the Gypsies of Wales*, was published by Oxford University Press in 1926 and reprinted in 1968.

But grammatical Romani is not generally understood by British Gypsies today. They speak a creolized version of the language and engage in the practice of code-switching. This speech is basically English with a number of uninflected Romani words grafted on. Such sentences as "Go an' see 'f the mush' in the kenna; povv the grof 'n put the karvie on a saster" (Go and see if the man is in the house, put the horse into the field to graze and put the kettle on the kettle-stand) spoken very fast, with deliberately bad diction, slightly stressing the Romani words, will have the desired effect of not being understood by an outsider. But the creolized Romani speech will not be understood by foreign Gypsies either and is hence quite useless outside Great Britain.

In the old days Romani had a practical use for Gypsies travelling

through several countries with different national languages. Every Gypsy had at least two languages, of which Romani was the first and the national language of the tribe's normal circuit was the second. Gypsies moving into an unaccustomed language area would at first make contact with local Gypsies by introducing themselves in Romani and then travel with the local tribe until they were able to fend for themselves in their new surroundings. The English Romani dialect merely serves our Gypsies as a means to privacy when they are in the public eye. So it is obvious that many Gypsies would prefer the speech to be kept secret. However, there is a "Romany Institute" and there are the "Romanestan Publications" which are quite successfully spreading the knowledge of the English Romani dialect.

Their latest publication, *Romani Rokeripen To-Divvus*, gives a fairly comprehensive analysis of the current speech and its possible use in the classroom. It is suggested that the foreign language sessions in the school curriculum might effectively be replaced by a study of general and comparative linguistics, including the dialect spoken in the school's region as well as Romani and other Traveller's speech. By upgrading dialect and the minority speech in the classroom it is suggested that pupils speaking non-standard English will gain in self respect, become more confident in their teachers and take more interest and pride in their literary efforts. Careful monitoring over a long period has shown that the best young essayists among Gypsies in English are also the best essayists in the English Romani dialect. Hints are given on when and when not to introduce the subject in the classroom.

Some good examples of Gypsy writing are given which show quite clearly when the language is used and when it is not used within the same narrative. Some passages are liberally sprinkled with Romani words, others are in English - which, however, differs from standard English in that the sentences are shorter and subordinate clauses are far fewer.

The Romani vocabulary used by English Gypsies is less than 1,000 words; sometimes it is as little as 300. But the game of "Incolning", that is the process of creating new terms from the available vocabulary of non standard words known to the speaker, is played all the time. This creative process is useful in the study of language in general as it gives children an insight into how the standard language itself had developed. "Incolning" has produced such striking Romani terms as "bongo-siv", Hook (lit. "crooked needle"), "dikin mukta", television (lit. "looking box"), "nashin chinamengri", telegram (lit. "running writing") and "pani varda", boat (lit. "water wagon").

This is the first new work on the Romani language in England for 109 years. It is readable, thought-provoking and entertaining. Unlike previous publications on the subject it does not romanticise it. The printing is a bit uneven and a few pages on whether we are dealing with an English or a Romani dialect strike me as unnecessary. Beyond that, I can strongly recommend the book to anyone interested in the subject.

## BOOKS

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METHUEN

Nigella Lawson







Interactive video is here to stay. Its potential for education is immense, its commercial prospects are glowing. These are the messages that were being transmitted at the recent opening of the National Interactive Video Centre in London. But perhaps not in that order.

Whatever the sceptics say, teachers should take heed of what goes on at the centre, for it is evidently a government investment in the future. A modest establishment with a systems display area that is reminiscent of a carpeted seminar room, it houses about seven work stations (television/video-disc players/computer keyboards/disk drives/interfaces), a research library of journals, books, a few interactive programs and a lot of dreams and ideas.

Its role is described by the director Angus Doulton as being to give unbiased support, information, advice, demonstration and training for anyone interested in using interactive video as a teaching aid, and to set up an exchange of ideas between publishers and trainers in education and industry. As he says himself of his staff of three, "Never in the field of electronic endeavour have so few been interfaced with so much".

On the face of it that may be so, but in the background are the pooled resources of some powerful teams, and among them they have a quarter of a million pounds invested in the centre: the Department of Trade and Industry, the Manpower Services Commission, the Council for Educational Technology, Thorn-EMI and Philips.

Commercial interests are obviously at stake and anyone who cares about education in schools as opposed to industry must have been concerned by the stress Lord Lucas, the Under Secretary of State for Trade and Industry, in his opening speech put on export potential and competition between Britain and the rest of the world.

But this could be a crucial factor in the centre's success. Its organizers appear to be doing a skilful job at harnessing educational dreams to commercial reality. Angus Doulton hopes to prove that the centre is "the right project in the right place at the right time", and his way of doing that is in the first instance to encourage people in industry, software producers and publishers, to come and try out their programs, discuss their needs and make recommendations and criticisms.

He sees the development of video-disc following that of computers; from industry down through higher education to schools, but he hopes to learn from other people's mistakes. Both video and computer programs separ-



## Chicken and egg

The new National Interactive Video Centre is the latest assertion of faith in the technology which combines video programmes with computer text and graphics. Gillian Macdonald attended its opening.

ately have been criticized for their poor production, unsuitability for educational purposes, and unimaginative exploitation of their potential. Interactive video is regarded with greater suspicion and generally rejected by teachers on account of expense, lack of realism and cutbacks in educational resources. Tony Bates of the Open University warns that "without careful design and choice of appropriate situations for use, an interactive videodisc could turn out to be a horribly ugly and expensive baby" (*Educational Broadcasting*).

This is precisely what Angus Doulton and his colleagues aim to avoid, and towards that end he will announce a five-year strategy at Christmas for the development of schools software and teacher training. The intention is

to begin with seminars for Chief Education Officers at the beginning of the year and to follow these up by holding groups in regional centres around the country. In the meantime teachers will be welcome at the National Interactive Video Centre - by appointment only - to try out the systems and the software in the library. Angus Doulton envisages that in five to 10 years' time primary schools might have a disc, say on Castles, with still frames on walls, fortifications and moats, films of their history and commentaries on their battles. The 54,000 frames per disc could be instantly accessed according to the project the children were working on, and one of the two audio tracks might provide a commentary for the teacher while the other addressed the children.

Professional software is currently being funded by the DTI, who are developing seven or eight videodiscs on subjects like medicine and tourism, with only one - on secondary science - aimed at schools. Brighton Poly-

technic demonstrated another on early language work for primary children - a cartoon program that plays a story sequence then asks children to fill in missing words on the screen. But British videodisc programs for education are still few and far between. The centre is looking to American and in particular Japan for models. Angus Doulton envisages that in five to 10 years' time primary schools might have a disc, say on Castles, with still frames on walls, fortifications and moats, films of their history and commentaries on their battles. The 54,000 frames per disc could be instantly accessed according to the project the children were working on, and one of the two audio tracks might provide a commentary for the teacher while the other addressed the children.

One could be used for slow teaching the other, or one might be in Bengali, the other in English. The possibility, he says, is endless and he believes that discs with 54,000 frames or a minutes' playing time per disc could be produced for as little as £5 each.

All this may sound idealistic, but being approached with enthusiasm. The organizers at the centre determined that the learning should precede the production of discs and that the danger of doing too much too quickly should be avoided.

The DTI is anxious to get things right. The feeling in the Department now is that the micro in primary schools should be approached in a different way, hardware being pumped into schools before the appropriate software is in-service training had been developed. There was a distinct release from Lord Lucas on the question of when videodisc players would be put into schools. His reply to the suggestion that a chicken-and-egg situation might occur, in which educators, publishers would be reluctant to manufacture the software while schools lacked the necessary hardware, was to maximize returns. It was his belief, he said, that the software would be put into the schools and would "demonstrate the egg is a chicken can go to work on its own". But in itself this will not be enough. Make interactive video take off in schools.

The hardware already exists and can be found in the centre. Thorn-EMI and Philips have provided LaserVision and VHD players so that both systems can be tried side by side. Thorn-EMI machines can now be purchased in £300 and the price is about to come down again, while other leading manufacturers also appear ready to cut prices. Interfaces to the computers can be bought for as little as £8.

The hardware is available, the programs are being developed and the strategy for training teachers is currently being devised. The computer are already in the schools, many are the old Catch 22 problem of persuading the publishers to produce software discs - say 5,000 a time - while interactive video is a viable option for schools. Only one thing will not achieve that - a government scheme to put videodisc players into the schools, perhaps in two or three years' time (see "notes").

Next week's Resources page will feature the BBC "Domesday Project".



## EAST/WEST divide

Gorman Stafford looks at a Schools television series which exposes the depth of the divide and the obduracy of which wars are made

General Studies: East versus West  
BBC2, Monday 11.42am  
Repeated Wednesday 11.39am.

There are clearly no more important issues in the modern world than those dealt with in these programmes aimed at students in sixth forms and further education colleges. The task of understanding the Soviet Union and her international roles is a daunting one. Even to attempt the task is an achievement and an anathema in certain circles. The facts of Soviet life and of Soviet aggression appear to leave no room for ambiguity. Understanding appears to be tinged with compromise, appeasement and weakness.

"Views from the West" traces the process whereby the Soviet Union moved from the position of a vital wartime ally to being in President Reagan's eyes "the focus of evil in the modern world". No attempt is made to play down Russian belligerence in

eastern Europe or to ignore her failure to fulfil many of the post-war agreements. The events are familiar but the emphases are subtly different.

Our interpretation of Stalin's foreign policy in 1945 is crucial. There are two strands to this. First, Stalin's determination not simply to recover Russia's pre-war frontiers but to ensure the existence of a security belt in eastern Europe, based upon governments which were not hostile to the USSR. Second, his role as the inheritor of an irreversible revolution which, by definition, had to be missionary and expansionist. Deciding which of these foreign policy imperatives most clearly explains Soviet action in 1945 and since has always proved difficult to the West. It has been easier to categorize all Soviet behaviour as imperialism than to acknowledge the deep insecurity which Russians have felt over the vulnerability of their frontiers.

The programme suggests a loosening of some Western certainties. Russia is not in any real sense ready to march on the West. The hysterical view of Russian intentions is politically useful in some Western democracies. The prime Soviet threat is ideological and not military. The breakdown of détente was the result of the unequal nature of the system and the fact that the rules were understood differently.

Terror and fear now make even the smallest development of trust impossible. The arms programme and the hyped-up political climate prevent east and west from having even minimal confidence in each other. Western scepticism of the 1982 Soviet commitment not to use nuclear weapons first is a case in point.

"Views from Russia" tells us what some Russians think about the east-west divide. There is a familiarity and within its own terms a chilling logic to it. The USA is responsible for setting the tone of east-west relations, is persistently hostile to the Soviet Union and remains the destabilizing force in

international relations. The Soviet Union is not threatening and could not possibly be conceived to be threatening. The Western press is concerned primarily to demonstrate Soviet shortcomings rather than Soviet achievements. Intermittent unrest in eastern Europe has been engineered directly by the clandestine activities of western agents as was indicated by the rapid return to normalcy after the events of 1956 and 1958. The world will of course one day be socialist but this will be an evolutionary process and not the result of Soviet aggression.

The "searing experience" of the Great Patriotic War radically changed Soviet attitudes towards the outside world. Military control of the countries around her borders provided the only real guarantee of national security and a halt to the seemingly endless invasions of Russian territory, of which Barbarossa and its aftermath was merely the latest and the worst.

Students will find these programmes compulsive but will not gain much consolation from them. The prospect does look bleak. In the depth of the divide and the rigidity of each perspective, historians can smell a great deal of the obduracy of which wars are made. It is only the unpredictability of history which can give grounds for hope and that is scant comfort. The citizen of the Soviet Union pleads for the West to approach the East unencumbered by western political criteria but appears quite unable to do the same in reverse. More contacts in every field, more objectivity and more studies of Russian life are some of the openings available to us. Monday's third and final programme in this excellent series will take the form of a studio discussion bringing together students from the Soviet Union, America and Britain. The accompanying booklet is a model of its kind, is outstanding value at 95p and contains over a dozen articles by authorities in east-west relations.

## Agony aunts or uncles

CONTINUING EDUCATION  
Claire Rayner's Casebook  
BBC1, Tuesday 11.30 pm.  
A series of 10 programmes.

Why are other people's problems so interesting? Watching Claire Rayner sitting in her cosy cluttered study, cradling her particular brand of breathy reassurance and really looking remarkably like a fond, huge beautiful eyes glancing in a puffy face wreathed in sympathetic smiles, I did suspect a prurient curiosity shared between her and us, the audience. Half a million times, just fancy! And all of them wanting to know if they were "normal". For all the diverse things that might mean, stay tuned...

The series covers such topics as suicide, incest and access by divorced fathers to their children, not all of which strike one as having the same claim to "normality". For these are very deep waters into which Ms Rayner plunges the consoling arm of the agony aunt. The answers, however, are not all that fish are as respectable and tame as Mark, a transsexual, who is angling duets with his white-haired mother at the piano. The hu-

man heart, as Blake remarked, is a hungry gorge.

"Sexual identity" was the theme of the first programme, which interviewed a transvestite and two transsexuals. Of course, the million dollar question in the minds of all the viewers - "What do they do, really?" - was never mentioned, though Yvonne, or Michael as his mates down the docks knew him, remarked on the thrill of "the swish of the skirt, the draft up the legs". At the risk of seeming filthy-minded, I must point out that transvestites, contrary to what Ms Rayner implies, is not like vegetarianism or liking to wear purple - it is an explicitly sexual manifestation, which is, as she sympathized, why "it is not easy having a transvestite in the family".

If transvestism challenges all our ideas of sexual identity, transsexualism is an even harder nut to grasp. Mark - "when they took the bandages off it just seemed so right" - and Rachel - "I had an intense desire to rid myself of all the physical manifestations of being a male" - appeared to be living the ordinary useful lives and yet, considering the nature of that surgery which had altered organs to a semblance of the opposite sex, it was hard to believe them when they claimed their

new identity as real. Doesn't sexual identity in human beings as well as flower depend on reproductive capacity? This no doubt hopelessly reactionary view was not considered in the programme, nor was mention made of the bizarre fact that many transsexuals become homosexual to their new genders.

More universal predicaments were exhibited in the second programme, "Being Single" which cheered us up if we were lonely. Don't worry, it's normal to be lonely. Margaret, who on the whole had chosen a solitary life in a country cottage, commented on the difficulties of existing in a couple-orientated society. Peter, whose girl had sold their engagement ring to put a deposit on her lover's motorbike, was convinced he wasn't good-looking enough and was urged to be his natural self and make friends.

Ah, Ms Rayner, if it were as easy as that. As I said, John and Bessy, both in wheelchairs, told a touching story of true love and wedding bells. "I was very lonely and now I'm not, I enjoy life." There's hope for us all. It'll be interesting to see how optimistic Ms Rayner will be about suicide.

Victoria Neumark

## Book parcels

Black and White and Read All Over  
Channel 4, Mondays 5.30pm  
From November 12.

Black and White and Read All Over - remember the old joke? The possible answer offered in the title sequence is a pun in a telephone box, tomato sauce on dominoes, a panda in tomato programmes. The answer, then, is it must be a newspaper, but a book.

For this is a series about books. If the frenetic fun seems to suggest that the programme makers feel it's an uphill task presenting books as enjoyable to an audience switched on by television, they may be right. In any case, there are plenty of useful plums of information and the comedy pie in

which they are set is rather endearing. Two presenters, Michael Rosen and Donna Croft, introduce five or six children's books in each programme. They play packers who work in the scruffy basement of a large department store which they think ought to sell children's books. They decide to do something about it.

Donna is bright and chatty, full of ideas and initiative (not long for the packing department, surely?). As her sidekick Michael Rosen (who is a bit of a clown, goggle-eyed and kipperted, perpetually amazed at Donna's

daring. These two, in nail-biting fear of Bozo the boss, who disappears over their initiative, pack surprise books into their parcels but tell us about them first.

So far these have ranged from jokes to Judy Blume, from West Indian poetry to natural history. There is a monster that Mike and Donna haven't noticed by the end of the second programme, a simple weekly competition, a surprise visitor, contributions from children and film sequences which might be about any relevant subject, from Carnival to dinosaurs.

The tone and most of the books suggested probably favour the younger end of the target age-range of five to 11, but the grown-upy bits (all the customers have names like Rhoda Blike, Nat Bits and Lydia Dustbin) and the energy of the presenters will probably ensure quite a following for *Black and White and Read All Over*. Then it's over to teachers and parents to make sure that the suggestions for reading are followed up.

Heather Neill

## briefings radio & tv

For schools

**JOB BANK**  
(Mon 9.15, Tues 11.40, BBC2)  
A programme for 14 to 18-year-olds, featuring the wide variety of jobs which require "Keyboard Skills".

**LET'S MOVE!**  
(Monday 11.20, VHF4)  
The Christmas term ends with a pantomime. "Cinderella" is introduced over the next two weeks and then performed in its entirety for five to six-year-olds.

**LIFETIME**  
(Mon, Tues 00.30, VHF4)  
A short series of programmes for 13 to 17-year-olds to help them cope with different kinds of pressure. Concentrates particularly on problems of self-confidence, addictive drugs and family life.

**FACTS FOR LIFE: FAMILY MATTERS**  
(Tuesday 10.30, ITV)  
What is it like to have a handicapped child? Who is there to help? The over-15s visit a day nursery and two special units.

**MY WORLD**  
(Tues 11.15, Fri 11.05, ITV)  
"Moving Home" takes the fear out of this major upheaval for infants.

**NEAR AND FAR**  
(Tues 14.15, BBC2)  
A unit of two programmes examining the idea of change for 9 to 11-year-olds.

**GEOGRAPHY TODAY**  
(Wednesday 10.48, ITV)  
"Valley Glaciers" is a study, for sixth formers, of the glaciers of the Val d'Arolla, Valais, Switzerland.

**HOW WE USED TO LIVE**  
(Wed 11.30, Fri 9.47, ITV)  
Yorkshire's award-winning historical drama series reaches the year 1912.

**TEENAGE PLAYS**  
(Wed, Thurs, Fri 00.30, VHF4)  
A group of 10-minute dramas, followed by short discussions, aims to encourage older teenagers to give opinions on their relationships with the police, their family and their friends.

**SCENE**  
(Thurs 10.34, Fri 14.00, BBC2)  
A new documentary film for 14 to 16-year-olds about glue sniffing - why people do it, the effect on their health and what can be done to stamp it out.

Continuing education

**THE STATE OF THE NATION**  
(Thurs 19.40, Radio 4)  
A five-part documentary in which natives of Northern Ireland, Wales, Scotland and England reflect on the past, present and future of their countries. Begins in Northern Ireland.

## 4 Television Programme Recording

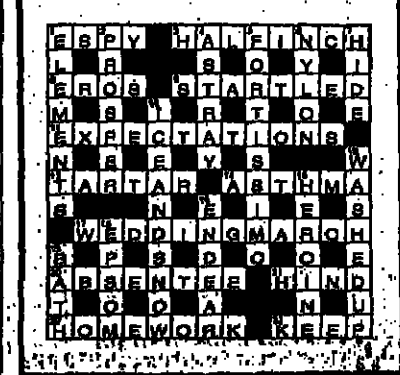
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| Sunday November 11                             | 19.30 Right To Reply Free Code A         |
| 13.00 Utopia Limited: Food For All Free Code A | 20.00 A Week In Politics Free Code B     |
| 17.15 The Business Programme Free Code F       | Saturday November 17                     |
| Tuesday November 13                            | 13.30 Clips Comic - Series II: Travel    |
| 15.45 Years Ahead Free Code B                  | Free Code B                              |
| Wednesday November 14                          | 20.00 The Sonnets of William Shakespeare |
| 18.30 The Living Body: Muscle Power            | Free Code D                              |
| Free Code E                                    | For More Information Contact             |
| 20.30 Diverse Reports Free Code B              | TV Recording Licence Dept.               |
| 22.15 Guardian Lectures: James Stewart         | GUILD LEARNING                           |
| Free Code A                                    | Guild House Peterborough PE2 9PZ         |
| Friday November 16                             | Telephone (0733) 83122                   |

## Cross words

Secondary Comprehension - a dual approach  
Pupils' book £1.40; Mark and Answer Guide 95p; Spirit master pack £11.95  
Nisbet  
Comprehension Crosswords Plus  
Price £9.95  
Nisbet.

W D Wright's dual approach to comprehension might have been especially designed for Sir Keith's new, two-tier 16-plus examination. It provides two sets of questions on each of a series of short passages, one set consisting of fairly easy multiple-choice questions, the other a more demanding mixture requiring answers "in your own words". *Secondary Comprehension* might also have been especially designed for very busy (or very) teachers. As befits such examination material, the books look incredibly boring and the passages are not exactly a bundle of laughs. However, the latter do provide a range of the sort favoured by examiners, from instructions on gas safety to



excerpts from popular histories, biographies and novels.

The passages are printed in the main booklet, together with the more open-ended questions which are designed to test vocabulary, understanding of idioms and figurative language, and the powers of deduction and assessment. Most do. The companion Mark and Answer Guide saves you, the teacher, the chore of actually reading the passages and tells you just what these open-ended answers should be, how many marks to give to each and provides line references in case you have to justify your marking.

Published alongside the booklets is a pack of spirit masters which can be used to run off sets of multiple-choice questions on each passage for even easier marking. Each master comes ready inked and will produce about a hundred copies. To make these, you simply draw the edge of a ruler or credit card across the face of the master while it is pressed against a sheet of plain paper, a time-consuming but pleasantly undemanding way of setting test papers or internal examinations.

Together the two styles of questions will provide endless hours of practice for examination candidates. Even less inspiring or purposeful is the spirit master pack of *Comprehension Crosswords Plus*, presumably designed for lower secondary pupils. Each spirit master offers a short passage and crossword, the clues to which are presumably intended to give practice in comprehension. In fact, many can be solved by guesswork or a casual search of the passage, neither of which is a habit English teachers will wish to encourage.

David Self

## notes

**BBC TO DEVELOP INTERACTIVE VIDEO**  
The BBC is entering the interactive video market with the launch of a major "Domesday Project". In addition to producing its first interactive videodisc, the BBC will develop its own interactive system with a new LaserVision player and a special interface.

"The Domesday Project" will cost £2½ million. It is being jointly developed by BBC Television, BBC Enterprises, Acorn and Philips Electronics, with backing from the Department of Trade and Industry. Designed to coincide with a documentary television series marking the 900th anniversary of the "Domesday Book", the videodisc package will record life in the United Kingdom in the 1980s. It will consist of three videodiscs, one of which will be made up from contributions from 9 to 14-year-old school children.

At the end of this month every school in the country will be sent information from the BBC. About 10,000 schools are expected to take part. Each will record detailed information about its own area.

The BBC interactive videodisc system will cost about £1,100, but individual parts will be compatible with other micro in schools.

## On the grapevine

The Grapevine Game  
£12 plus £1.50 p&p  
New Grapevine, 416 St John Street, London EC1.

Should two lovers be frank and earnest or should one of them be a girl? Thus the idea of homosexuality was introduced to me at the tender age of eight. It seemed exquisitely humorous. I rather pity the embarrassed teenagers who are going to have to consider the question under the grim rubric "sexual identity" and discuss amongst their peers "How would you react if a friend or member of the family told you they were gay?"

But this is just one of many topics which 2-8 players can enlarge on as they twirl their spinning tops and move round the board of *The Grapevine Game*. As the player lands on a space marked "fact" or "opinion", she or he takes a card from the appropriate pile, reads out the question, for example "Why do you think people have sex?" gives the best answer she can, returns the card to the pile, and the topic is either thrown open to discussion or the next player, as in *Ludo*, takes her turn.

Sex education is a dicey business. So many outside factors come into play before ever the cards are on the table. This game, devised over the last few years by the workers at New Grapevine, a counselling service working with young people in Islington and Camden, needs careful handling. Above all, the class or tutor group must be prepared for what is to come, must have parental consent and, preferably, be in same sex groups with adults of the same sex to initiate the game.

Victoria Neumark











# EXTRA

## Computers in education



### Coherence is the casualty

One major problem arising from the rapid growth of the use of computers in primary schools can be best illustrated by recounting a conversation I had recently with a concerned and articulate parent. Her son had been taught computer studies in his primary school, had developed an interest and aptitude for programming in BASIC, and now owned a home computer because of the work done in the primary school. However, the secondary school to which her son had transferred did not teach computer studies until the fourth year, and taught no programming in BASIC except as part of the examination course in computer studies.

The primary school did have a timetable slot for Computer Studies and this was taught by a mum who had been a computer teacher in a secondary school. The son was one of a group of boys who had become very enthusiastic about programming and who had, with the assistance of the mum, written some machine code routines for screen graphics. The secondary school is following an ambitious Information Technology course which is compulsory for all pupils but which specifically does not include programming as a major activity.

The mother accepted that the secondary school's curriculum could not be dictated by the curriculum of any one of its feeder schools or vice versa. What most annoyed the mother, and the other parents, was that either the primary school, or the secondary school, or both of them, must be wrong but no-one would say which.

The growth in the use of home computers often makes parents feel that the school should be doing something, if only to prevent school from seeming an increasingly irrelevant place to their children. But how many parents must now be feeling very frustrated at the amazing lack of a visible coherent policy for computer education.

The case cited above may be extreme and the policy of the primary school hard to justify, but many primary schools (or at least some teachers) make good use of the computer to enrich, extend and extend the educational experiences offered to their pupils. These pupils can suffer when they go to a secondary school where all the computing resources are fully committed to examination courses in computer studies.

In these cases, pupils who are quite competent users of computers, (frequently more competent than many secondary teachers) are often told that computing is too difficult for younger pupils and they will have to wait until the fourth year.

Some of these problems undoubtedly stem from the weakness of the Department of Education and Science in allowing the wishes of the Department of Industry to set the pace of provision of computers in schools. Moreover, the Microelectronics in Education Programme's early obsession with producing as much software of variable quality as possible, and its lack of understanding of the education system, blinded it to the need to work with particular levels of management. Some parents, from the very best of intentions, have also helped to create the situation that now concerns them. They have been generous in providing additional funds. The key to long term success must lie with coherent policies at school and I.e.A. level backed up by appropriate resource provision.

This is hardly a popular message to teachers who want to teach what they want, or what they know, rather than face the problem of what and how their pupils need to learn. It is not popular with those advisers who wish to work through compromise to avoid offending some entrenched teachers rather than through positive leadership, or with Education Committees who do not wish to be tied to any long term plans for the supply and training of teachers and the finding of suitable facilities.

It is not possible to state what the detailed solution would be for every school or I.e.A. While there would probably be general agreement that primary schools should concentrate on learning with rather than learning about computers, in secondary schools there are already some deeply entrenched protagonists.

First, there are those who favour Computer Awareness, Computer Appreciation or Information Technology as a new subject, or at least a timetable slot because they feel that only this will give the necessary status and hence resources, as well as being the realistic way to cope with in-service training.

This approach is anathema to those who favour a cross-curricular approach, in those who see Information Technology more as a means to

changing the way pupils learn rather than what they learn. Many such teachers favour IT skills in the context of some other activity.

Even when some agreement is reached within an I.e.A. on these points the next question is the balance of provision of resources to primary and secondary schools. Resources include not only hardware and software, but also the limited time of the advisory service responsible for technical support and staff development. Many of the supporters of the use of computers across the curriculum favour the provision of resources for primary schools. They see the primary environment as more suitable to the pervasive but unobtrusive use of computers. In use in group and topic work can inculcate in pupils' minds the idea of the computer as a tool rather than as an object of study.

This approach, however, begs the question of how close this view is to reality in junior schools, as well as ignoring a growing opposition to topic work and recent HMI comments on the desirability of subject teaching in the primary school. There is also the danger that the impossibility of effectively and efficiently training so many teachers will merely lead to a very patchy experience for far too many pupils.

A much more realistic approach is to give the major part of the effort to those who are soon to leave school to join a world of work or pseudo-leisure governed by the impact of the new technology. In simple management terms this has the advantage that it reduces the target area for already hard pressed leaders in the area. It would mean that the education service was no longer implicitly dependent on the Manpower Services Commission.

This is a selling primary schools what was acceptable and even desirable, and making sure that secondary schools provided to all pupils their curriculum entitlement. This could be difficult for those who have refused to accept the logic of the Secretary of State's two circulars on the curriculum, but easy for those who wish to see the education service run with the efficiency and purpose of a supermarket chain rather than as a motley collection of corner shops. These are the options: take your pick.

Paul McGee

|                            |    |                                           |    |
|----------------------------|----|-------------------------------------------|----|
| Introducing computers      | 37 | Dyslexia                                  | 57 |
| New worlds                 | 38 |                                           |    |
| Loosing momentum           | 39 | <b>REVIEWS</b>                            |    |
| Jobs on offer              | 42 | Graphics on paper                         | 59 |
| Careers education          | 43 | Spelling and textgrading                  | 60 |
| Electronic 'pages'         | 44 | Primary and secondary mathematics         | 61 |
| Prestel scheme             | 45 | Authoring system                          | 61 |
| Deployment within a school | 46 | Economics                                 | 62 |
| TVEI                       | 47 | Wordprocessing                            | 62 |
| International views        | 48 | Election simulation                       | 63 |
| Logo                       | 49 | 'Caretaker', a tool for BASIC programmers | 64 |
| Development education      | 50 | Initial primary training                  | 64 |
| Evaluating software        | 51 |                                           |    |
| Wordprocessing             | 52 |                                           |    |
| Networks                   | 54 | Interactive science                       | 65 |
| Geography                  | 55 | Expert systems                            | 66 |
| Prolog                     | 56 | Videodisc production                      | 66 |

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Telephone: (0752) 41287

#### PRIMARY EDUCATION

**TRAFFORD**  
METROPOLITAN BOROUGH OF TRAFFORD  
EDUCATION DEPARTMENT  
STAMFORD PARK PRIMARY SCHOOL  
Cotton Road, Hale, Trafford, Cheshire WA15 9JB  
Tel: 061-928 4040  
SCALE 1  
Applications are invited from suitably qualified and experienced teachers to be responsible for language and reading curriculum. Music desirable.  
Applicants should telephone the headmaster at the school as soon as possible (28788) 110030

#### WILTSHIRE

Please see display advertisement on 110028

#### Scale 1 Posts

**BEDFORDSHIRE**  
SOUTHERN AREA  
ENFIELD JUNIOR SCHOOL  
Pastures Way, Luton, Beds. Tel: 0525 60427  
Headmistress: Miss B. Wiseman  
Required for January 1985, an enthusiastic teacher to teach Science, Biology and P.E. and also be responsible for the other area of the curriculum. Scale 1. Closing date 26.11.84.  
Application forms and further particulars obtainable from and returnable to the Headmistress at the school. See please: (28750) 110022

#### BRENT

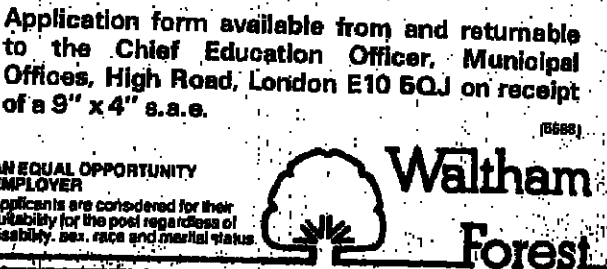
**LONDON BOROUGH OF BRENT**  
KILBURN PARK J.M. SCHOOL  
Pool Road, NW6 3RD  
(Roll 132: Social Priority School)  
Required for January 1985, an enthusiastic teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
**PRESTON PARK J.M. AND J.F. SCHOOL**  
College Road, Wembley, Middlesex (Roll 254)  
Required for January 1985, a teacher for Junior Scale 1. London Allowance of £987 per annum is payable. Brent is an Equal Opportunities Employer. Brent is fundamentally committed to Multi-Cultural Education. Suitable forms (see 110022) available from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### BROMLEY

**LONDON BOROUGH OF BROMLEY**  
BROMLEY PRIMARY SCHOOL  
Bent Hill, Chislehurst, Kent  
Required for January 1985, a teacher for Junior Scale 1. Lower School age range. The school is looking for an enthusiastic and versatile primary teacher with recent experience of teaching both text and cross-curricular children to contribute to the development in the school. A specific responsibility for the development of the school's curriculum and an extra-curricular activity is required. Any professional or personal skills in drama, music, computers and/or drama would be an advantage. Application forms available from the Headmaster at the school. Closing date 10.12.84. (28715) 110022

#### Temporary Teachers

Qualified and experienced teachers including those with nursery training required to teach in Primary Schools. Appointments will be made on 1 term temporary contracts initially.  
Scale 1 plus Outer London Allowance.  
Application form available from and returnable to the Chief Education Officer, Municipal Offices, High Road, London E10 6QJ on receipt of a 9" x 4" s.a.e. (2888) 110022



#### DEVON

Please see display advertisement on page 35. (28703) 110022

#### ENFIELD

**LONDON BOROUGH OF ENFIELD**  
ENFIELD MUSIC SCHOOL  
Required for January 1985, or as soon as possible, a Primary Teacher, initially for the Nursery Class.  
Governors wish to appoint as soon as possible a Primary Teacher, initially for the Nursery Class.  
(Scale 2 may be available for suitably qualified candidates offering curriculum leadership.)  
Practising Catholics preferred.  
Outer London Allowance Payable.  
Application forms available from and returnable to the Headmaster, (28707) 110022

#### ENFIELD

**LONDON BOROUGH OF ENFIELD**  
ST EDMUND'S R.C. PRIMARY SCHOOL  
Stamford Road, Edgmont, London N9  
Required for January 1985, a teacher to be responsible for the Junior Catholic Class.  
Application forms (large s.a.e.) obtainable from and returnable to the Headmaster at the school as soon as possible.  
REQUIRED FOR JANUARY 1985  
A number of vacancies (initially temporary) will be available in January 1985, in the following areas: Primary, Infant, Junior, and Nursery. Required teachers will be from newly qualified teachers.  
London Allowance: £645.  
Application forms (large s.a.e.) obtainable from and returnable to the Director of Education, P.O. Box 56, Church End, Silver Street, Enfield EN1 3XQ. (28335) 110022

#### HAVERING

**LONDON BOROUGH OF HAVERING**  
ST JULIAN'S J.C. JUNIOR SCHOOL  
Straight Road, Romford RM3 1LH (Roll 190)  
Tel: Ingersburg 43170  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### HEREFORD AND WORCESTER COUNTY COUNCIL

**CHARFORD FIRST SCHOOL**  
Charnock Road, Worcester B60 3JH  
Required for January 1985, a teacher for Junior Scale 1. London Allowance of £987 per annum is payable. Hereford and Worcester is an Equal Opportunities Employer. Hereford and Worcester is fundamentally committed to Multi-Cultural Education. Suitable forms (see 110022) available from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### HERTFORDSHIRE

**THE BURLEIGH HILL SCHOOL**  
Hemel Hempstead, Herts.  
(Head: Mr R.P. Walker)  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### HERTFORDSHIRE

**ANDREWS LANE INFANTS SCHOOL**  
Hemel Hempstead, Herts.  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### HILLINGDON

**LONDON BOROUGH OF HILLINGDON**  
ST. BERNADETTE'S R.C. SCHOOL  
160 Long Lane, Hillingdon, Middlesex UB8 3JH  
Governors wish to appoint as soon as possible a Primary Teacher, initially for the Nursery Class.  
(Scale 2 may be available for suitably qualified candidates offering curriculum leadership.)  
Practising Catholics preferred.  
Outer London Allowance Payable.  
Application forms available from and returnable to the Headmaster, (28707) 110022

#### KINGSTON

**UPON THAMES**  
ROYAL BOROUGH OF KINGSTON UPON THAMES  
ST. MARY'S C.E. PRIMARY SCHOOL  
Church Lane, Kingston, Surrey KT5 6JH  
(Voluntary Controlled)  
No. on roll: 160  
Required for January 1985, a teacher with Nursery training and experience of teaching in a two place Nursery Class in a primary school. An interest in computers would be an advantage.  
Candidates in sympathy with the teaching of the Church of England preferred.  
Visits to the school welcome.  
Scale 1 post: London Allowance £645.  
Application forms available from the Director of Education and Recreation, Guildhall, Kingston upon Thames, Surrey KT1 1LH. (28715) 110022

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Application forms available from the Director of Education and Recreation, Guildhall, Kingston upon Thames, Surrey KT1 1LH. (28715) 110022

#### MERSEYSIDE

**PRIMARY CURRICULUM PROJECT WORKER**  
Merseyside Associate for World Development  
Education seeks enthusiastic and experienced teachers to develop a curriculum initiative to encourage children to view the world from a global perspective. The project is based at the World Centre, Liverpool. The project runs from 1985-86.  
Further information from Peter Dring, Director of Education, 115 525. (28557) 110022

#### SUFFOLK

**WHITE HOUSE INFANT SCHOOL**  
Watlington Road, Ipswich IP1 1LH (Roll 140)  
Required for the beginning of the Spring Term 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### SURREY

**EDUCATION COMMITTEE**  
SURREY  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

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#### NEWHAM

**LONDON BOROUGH OF NEWHAM**  
ST. WINEFRIDE'S R.C. SCHOOL  
Church Road, London E12 7HR  
Head Teacher: B. Doherty  
Number on roll: 230  
JUNIOR TEACHER Scale 1  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### NEWHAM

**LONDON BOROUGH OF NEWHAM**  
ST. WINEFRIDE'S R.C. J.M. & I. SCHOOL  
Church Road, London E12 7HR  
Head Teacher: B. Doherty  
Number on roll: 230  
JUNIOR TEACHER Scale 1  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

#### NEWHAM

**LONDON BOROUGH OF NEWHAM**  
NEW CITY PRIMARY SCHOOL  
New City Road, London E13 6JH  
Head Teacher: Mr. J. Hunt  
Number on roll: 330 plus 30  
JUNIOR TEACHER Scale 1  
Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
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Required for January 1985, a teacher to take a class of 30-35 pupils in the multi-cultural area. Energy and initiative are essential. An interest in the Craft and/or school journey would be an advantage. Vacancy due to promotion.  
Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

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Number on roll: 330 plus 30  
JUNIOR TEACHER Scale 1  
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Application forms (large s.a.e.) obtainable from the Headmaster at the school. Closing date 10.12.84. (28755) 110022

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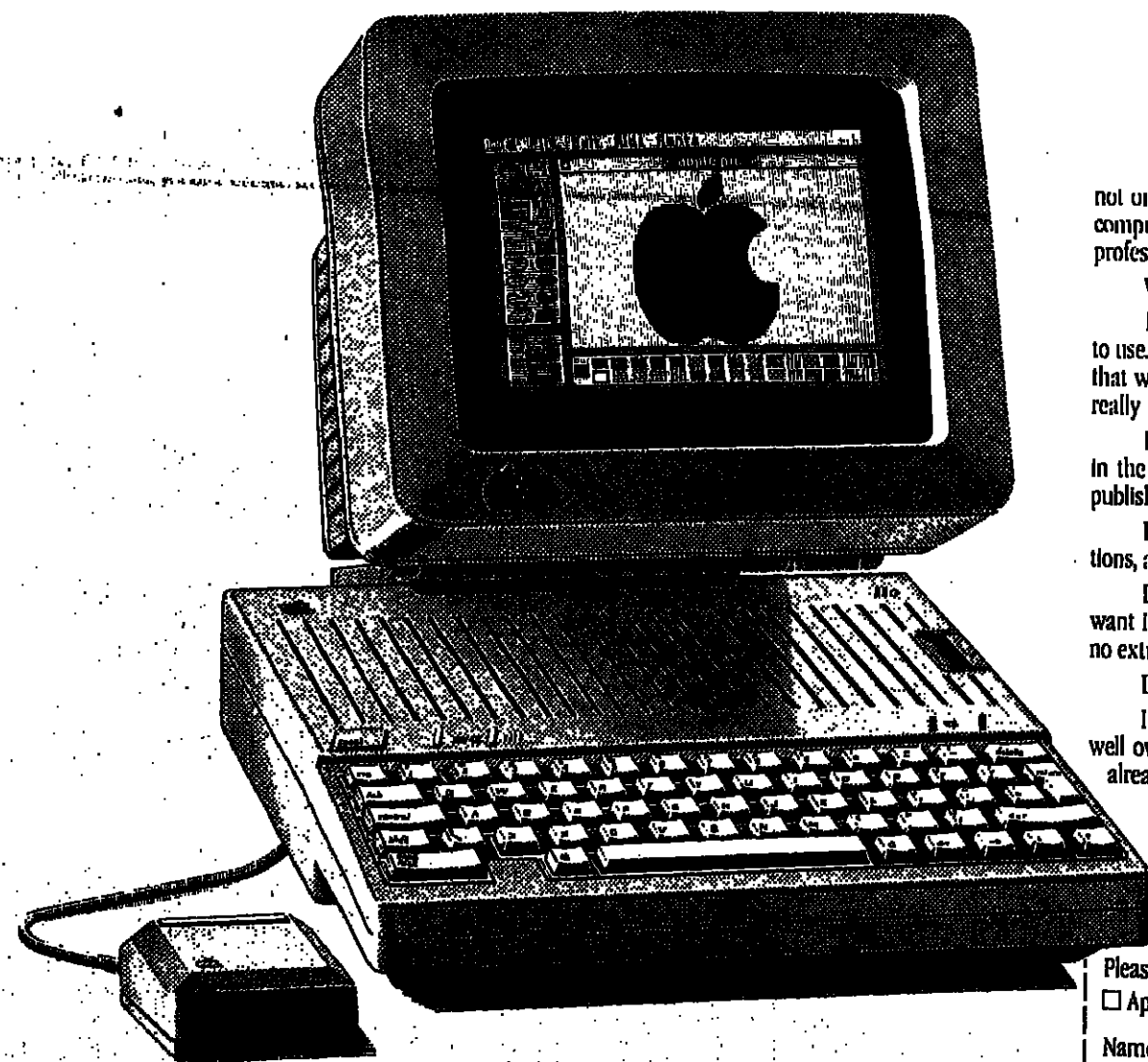
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WHEN IT COMES TO EDUCATION, APPLE MEANS BUSINESS.



The ten year old, who wouldn't try to write because of a history of botched and ridiculed attempts, but who found that a simple wordprocessing facility re-established his confidence and won him the respect of his peers; the fourteen year olds, struggling with the topic of population trends, who found that a computer simulation was the key to understanding; the sixth-formers on an ecology field study course, who had time to think deeply about the data they had collected, because a computer was carrying out the routine calculations that used to be done manually; the disaffected children, who found LOGO an irresistible challenge: all these pupils and their teachers have benefited from the availability of microcomputers and their experiences could be matched by thousands of others. The particular examples quoted here just happen to be ones of which I have some personal knowledge, as they are a small subset of the many a group of us at the Open University collected for a pack in our Micros in Schools series, entitled *Micros in Action in the Classroom*.

Not all uses of school micros are so clearly beneficial. Nor are all opportunities for beneficial use being grasped. Sometimes this is due to school policies about the deployment of micros and sometimes simply to a scarcity of equipment, but it can also be because of a lack of awareness of the roles a micro can usefully play, or a scepticism about the claim that they can enhance the curriculum in any significant way.

School policies which restrict micro use, computer awareness and computer studies courses, will mean that teachers of other subjects will be unlikely to have their awareness raised. In this article I should like to break into this vicious circle by touching on a range of ways of putting micros into effective action in the classroom, ways which do not actually require large quantities of expensive equipment.

## Information handling

It is often argued that all kinds of information is now stored in computer databases, and that schools should therefore impart some understanding of what these involve, and how databases can be used. It is also widely held that children learn concepts best when these are rooted in their own experiences in their local environments.

These two ideas came neatly together when classes engage in projects involving the collection of data and its subsequent analysis. We found one particularly striking example of such a project in a class of nine and ten year olds in a London school. Their teacher, Alistair Ross, noticed a lively dispute going on as to what were the best kinds of conker. He steered the children away from the trying to resolve this problem through endless conker fights and heated arguments, to another, more scientific approach. After a lot of class discussion, several possible factors were identified and a plausible way of measuring the strength of a conker was developed - a conker's strength was the height from which a standard weight had to be dropped in order to crack it.

The problem was then one of relating the strength to the possible factors. This was where the micro came in. The children collected data on over 200 conkers and entered it into their conker database. Then they worked in groups on particular aspects, such as 'how does strength relate to age?' They interrogated their database to find out. Eventually, they put all their conclusions together and decided that the best kind of conker was one that weighed more than 17g, had a volume greater than 14cc and was between one and four days old.

Now in all this activity, the micro only played a small role. It ordered and



## Means of entry

Ann Floyd suggests effective ways of introducing micros into the classroom

tabulated the data and did some calculations. The children could have done all of this manually but it would have taken so long and been so tedious and error-prone, that they would have lost interest and consequently not have participated in generating and testing the hypothesis to anything like the same degree as they did.

It is also significant to note that one micro was more than sufficient to support the activity of the whole class. Different groups used it at different times, and most of any individual child's time was spent discussing the recording results, not at the keyboard.

This is characteristic of information-handling uses of the micro throughout the age range and across many subject areas. A popular application is in history, where the data may be local census records or poll books. Pupils of all ages and abilities can interrogate them at their own levels, exploring such things as demographic changes and occupational patterns and hypothesizing why these might have occurred. Another class of activities involves pupils in creating databases for others to use. Library data and information about local services and facilities were two examples we encountered.

## Logo

The potential of Logo is much more widely grasped in primary schools than it is in secondary schools. Yet the benefits of engaging in Logo programming such as developing spatial skills, learning how to analyse problems into sub-problems and exploring mathematical concepts dynamically, are not logically confined to any age group.

One of the reasons for the greater use in primary schools must be that where a class of children is with the same teacher most of the day, it is easier to arrange work in such a way that the children can take turns at the keyboard throughout most of the day in groups of two or three. This seems the most fruitful way to work with Logo, at least in the early stages. Another reason may be that older children would be more in need of a complete Logo rather than a subset of it, and there has hitherto been no complete Logo for the most popular school machine, the BBC Model B. This situation is about to be rectified with the imminent launch of several Logos, including one developed by the OU (which will be incorporated in the appropriate Micros in Schools packs) as well as being available, through BBC

Enterprises). Once full Logos are widely available, their use in secondary school mathematics will be increasingly explored and should be commonplace in the longer term.

## Language development

All the examples mentioned above are replete with opportunities for language development because of all the discussions involved and the need for precise statements of hypotheses. But language development can also be directly addressed, as in the use of wordprocessing to encourage the preparation of more polished work, and in the use of such activities as adventure games in which children create and describe their own scenarios within a flexible structure.

There is also scope for developing vocabulary and increasing grammatical understanding through such activities as endeavouring to fill in gaps in poetry or prose displayed on the screen, both in English and in other languages.

Teachers of modern languages with their often less than happy experiences of language laboratories may well be more sceptical about micros than most but one school we visited has groups of fifteen year olds trying to fill in gaps in a French passage specifically chosen by their teacher because it introduced some new vocabulary and reinforced recently taught grammatical structures.

There is a host of other examples of micro uses, such as games in which pupils pit their wits against the micro and develop logical skills and mathematical concepts in the process, or are faced with making decisions about how, for example, to handle an oil slick approaching a beautiful stretch of coast, given the unpredictability of the wind and the weather. There are opportunities for exploiting the micro right across the curriculum and with pupils of all ages.

It is worth observing that in none of the cases described is the computer a replacement for the teacher. Rather, it is a powerful tool, a rich resource, which teachers and pupils can use to enhance classroom activities of many kinds.

Further information about the *Micros in Action in the Classroom* pack, the other packs in the series and the *Open University Logo* can be obtained by writing to the Project Manager, *Micros in Schools*, Open University, Walton Hall, Milton Keynes.

Ann Floyd is Deputy Director of the Open University *Micros in Schools* project.

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By the end of this decade school children will be gathering information in new ways. The microcomputer, today still rather a novelty in many schools, will become the access point to school databases and the link with major databases in the outside world. Human teachers, embarking on a new role, will be freed to do more creative work in the classroom - assuming the political climate allows - and expert systems will allow children to quiz knowledge bases as they now do a human teacher.

These types of supplementary but powerful methods of knowledge transmission are already in use, at a fairly low level, in a few schools and the next wave of progress in educational computing is likely to be concerned with the establishment of networks to multiply the computing power available, the development of larger knowledge databases which will allow schoolchildren to interrogate them successfully and with on-line information retrieval.

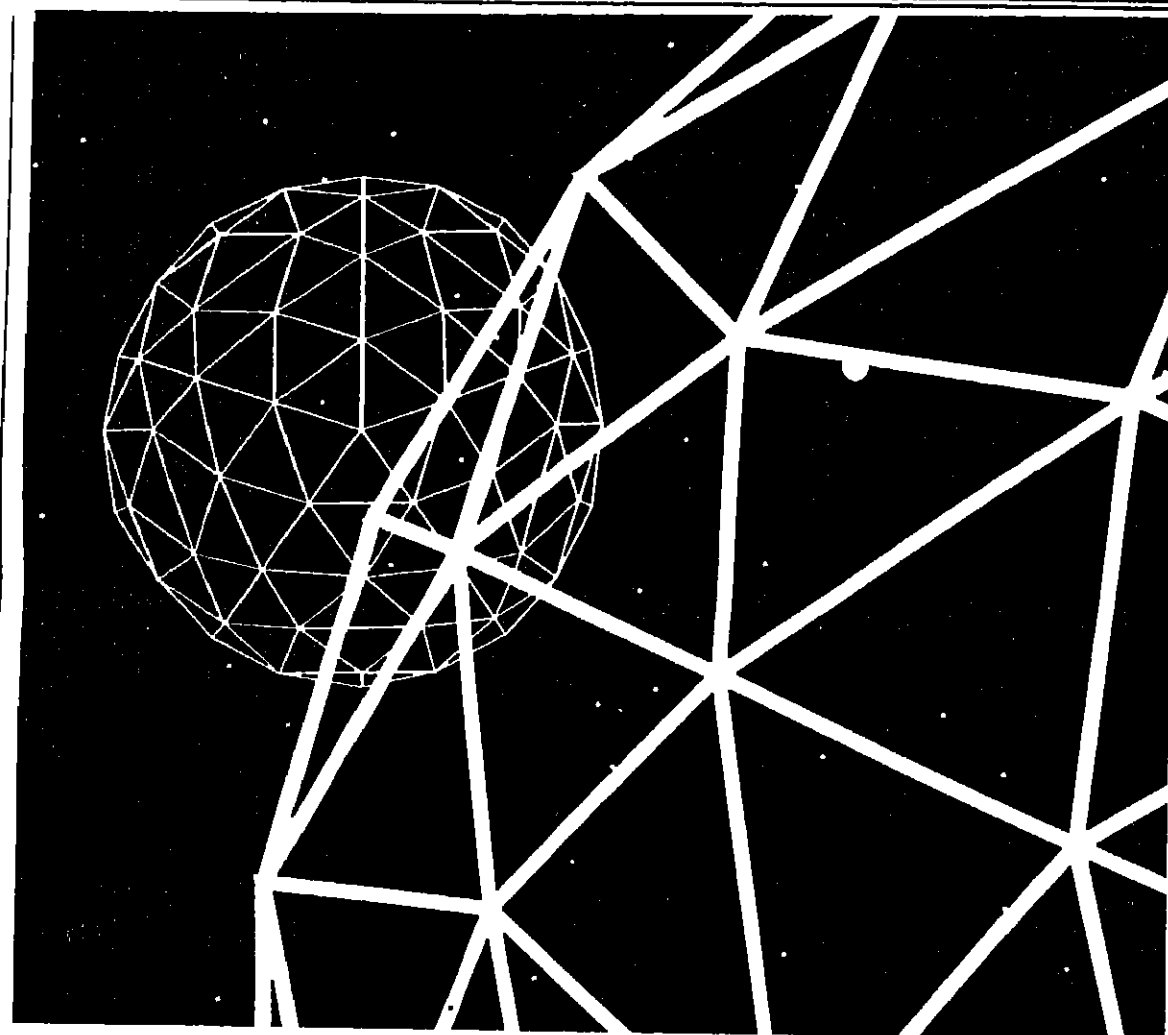
An "expert system" is a computer program which embodies much of the knowledge and understanding of the human it seeks to emulate - in this case the teacher. As Professor Tom Stonier of Bradford has observed, an expert system is rather like a granny: a source of knowledge which can be questioned at will.

Such systems are already developed and running in defence, industry and universities and as microcomputer versions of languages such as Prolog are disseminated, so systems for education will be developed.

One vital consideration will be to build what Professor Donald Michie has called a "humane window" into the systems we place in schools. Developing large database systems which contain answers to many questions is not enough.

In his book, *The Creative Computer* (published last month by Viking at £12.95) Professor Michie asserts that the world is suffering from "complexity pollution" and that the expert systems we build for the future must be able to explain how they come to their knowledge. We have to be able to ask a database for a fact and then ask it how it knows the answer to be true.

True expert systems are only developed within a symbiotic relation which involves the expert model (the teacher or teachers), a "knowledge engineer" and a computer programmer. The teachers work with the knowledge engineers for several years, slowly translating the knowledge and experience of the human into rules which the computer can observe. The aim for education is simple: to multiply the number of teaching talents available and thus improve education.



## New worlds

Ray Hammond looks to the future

It is clear that expert systems, however expert, won't replace the vital human interaction that will be at the heart of any sane education programme, but they will be used as powerful tools in the task of transferring knowledge.

The first educational databases to be installed in schools are likely to be fairly inexact, containing a lot of knowledge with a relatively poor interface between the questioner and the system. To be useful even this early type of knowledge base will have to boast software which allows its young

users to couch their questions in imprecise terms. The rigid syntax rule which must currently be observed in our communication with computers is merely an illustration of their low intelligence level. The systems used in schools by 1990 should certainly allow children to ask questions in ordinary English with a degree of imprecision. The system will then question the child about the enquiry to define precisely what is being asked.

It should be made clear that this communication between pupil and mechanical teacher will still be all

written, probably through a conventional QWERTY keyboard, in the early 1990s. Despite many claims about the arrival of speech recognition, it is unlikely that full scale speech recognition will be viable before the turn of the century.

Most school database systems will probably be able to understand restricted spoken vocabularies by the beginning of the next decade, but serious communication is still likely to be tied to keyboard operation.

Over the next couple of years, a large proportion of teaching staff will be adapting to the arrival of machine intelligence in the classroom, but while in-service training is (hopefully) continuing for those who have yet to grasp the full implications of the information revolution, many teachers will be putting their equipment and software to ever better use.

Another important development which will occur in school computing over the next few years is the arrival of network capability and external on-line information retrieval. At the moment both concepts are only vaguely understood by most teachers, but they will be in everyday use in almost all classrooms by 1990. The reason for this development is certain: there is a wealth of information already available on-line and retrieving it is relatively inexpensive.

Contrary to many opinions which were being expressed vociferously as recently as a year or so ago, current school computers are not going to become obsolete in a year or two as new and better machines are developed. It is now quite clear that the "add on" expansion possibilities of such machines as the BBC micro and the RML machines are now so great that there is no need for any school authority to consider replacing the machines on the grounds of obsolescence within the next few years.

What will happen is that more similar machines will be added to the computer arsenal inside individual schools and, more importantly, much more use will be made of existing hardware as better software and interfaces - such as networking and on-line communications - become available.

The interconnection of microcomputers inside a school allows the individual power of the machines to be linked and, finally, increases their scope for educational uses. This can be used in a number of ways. In a single

classroom, several microcomputers may be linked to allow pupils and teacher to work at a single problem interactively; the micros become intelligent text-books which are always under the teacher's control. In a school setting, individual micros can be linked to a central database, providing an electronic library as well as such facilities as central dictionaries, thesauri and other similar facilities.

In Ontario, Canada, the local education board has taken the concept a stage further and has created a network system which links the computer centre of the authority to each school, allowing it to distribute programs and new software around the schools automatically. It seems likely that cost considerations will stop such a scheme being developed in the UK.

As computing power grows it is the software which requires intensive development. The BBC Microcomputer can now be expanded until it reaches the kind of power which was, until very recently, only associated with very expensive mini and mainframe computers.

Adding the Torch 68,000 co-processor expansion system allows the machine to operate as a Unix-based multi-user network with a shared common-knowledge database stored on hard-disk. It is doubtful whether such a system is yet up and running in a school, but within a year or so we can expect to see proprietary software which will work with this powerful computing system to allow non-programmers to create a school database which pupils can tap either individually, or under instruction. RML's Chain network system, already installed in many educational institutions, is now proving how valuable such linking can be. It is the relationship between the school's curriculum and the knowledge to be contained in such a database which is likely to cause some staff room contention.

On-line information retrieval is also going to be very important in secondary education. The cost of adding a modem and communications software to a typical school computer is about £150 and a single modem can be used by a number of different microcomputers. The knowledge already available on-line is vast, but totally unappreciated by those outside of libraries, universities and other "professional" establishments.

Already organizations such as The British Library, The Knowledge Index, DIALOG and Nexis offer vast quantities of current and historical data on-line at interrogation costs which are not prohibitive. New on-line services are opening rapidly and by the end of the decade many full-text services will be available which will offer information about sciences, the arts and current affairs and which will have the capacity to illustrate and illuminate most subjects in the secondary school curriculum. We will certainly see the establishment of specialized databases intended for school use.

As the role of knowledge transmission begins to shift from the human to the computer several important questions are raised. At the Massachusetts Institute of Technology, Seymour Papert and his team are now working on a project called "Word Worlds." In this experiment children are provided with a database with information contained on videodisc. The expert system which controls the databases provides the child interrogator with pictures which illustrate the information provided. As fascinating as this experiment sounds, Papert has already sounded a note of caution about the implications of such knowledge transmission.

He has warned that replacing the human with a machine which provides answers to the questions of childhood would deprive children of a great deal of human interaction which might be a very important part of their psychological development. He has suggested that a generation reared on knowledge supplied from machine sources might produce a group of psychotics.

Despite these proper concerns, it seems certain that over the next five years educators will get down to using machine intelligence positively rather than in the rather uncertain and hesitant attitude which is the hallmark of so much current educational computing.

On page 66 Mike Doran discusses expert systems.

Ray Hammond is the author of *The On-Line Handbook* to be published by Fontana on November 15 and Forward 100: LOGO and Your Child published by Viking on November 9.

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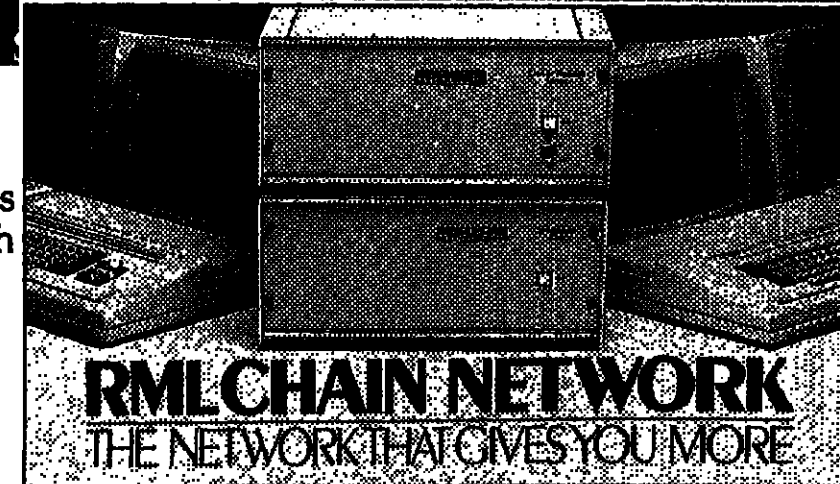
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# Losing momentum

Mike Thorne argues that further progress in educational computing could be impossible without investment

Until a short while ago, rumours were circulating that the Department of Trade and Industry was to introduce a half-price software scheme similar to that for hardware. Organized in the right way such a scheme could have stimulated considerable innovation in the way that the National Computing Centre's Software Products scheme has stimulated activity in business software.

As it is, the proposal has been dropped: the DTI is short of cash for education; the small sample of educational publishers asked by the DTI if they supported the idea, didn't; and there was general concern that with first class material from the USA destined for the shelves of WH Smith in versions specially written for the BBC machine, the half price vouchers would be used to buy America software.

Abandoning this scheme is a disaster for the educational community and for the British home software industry. Wake up DTI! Sales of educational software in the USA this year are set to reach \$1 billion. Are we not interested in this market? If we are, then the time has come to establish two or three educational software innovation centres funded on equal terms by the DTI and industry. The primary function of these centres would be creative but also informative. The emphasis would be on producing ideas for topics thought suitable for CAI package by larger groups of teachers than would be possible for a commercial software producer.

A UK publisher's move into educational software too often involves hiring a single programmer. The USA's giant Children's Television Workshop - creators of *Sesame Street* - organize their production of each software package around teams of ten: four programmers and the rest artists and educationists responsible for program content as well as the documentation and packaging. Best selling Boston-based Spinnaker reported by the *Wall Street Journal* to be spending in excess of \$100,000 on developing each of their programs. Obviously we cannot spend these amounts but these examples illustrate the sort of competition publishers face, and the need for a greater commitment.

One great eater-up of time and

therefore money in a software creation is "versioning" - providing different formats of programs for each computer. This deflects attention from educational innovation to coping with the diverse peculiarities of graphics on all the different available home micros. The Microelectronics in Education Programme's new software unit, for example, finds that the organization of versioning is a major responsibility.

The penalties of versioning could be eliminated either by standardization among hardware manufacturers (which is unlikely) or by producing the software so that it is easily transportable between machines in the first place. Unfortunately, most programs which use graphics and/or machine code require a virtual re-write to run on another machine.

**"In short, none of the machines schools have is particularly favourable to the development of first class CAL software without urgent investment"**

Another aspect of the MEP Software Unit's work has been to look into ways of programming educational software more cheaply. No-one with commercial sense would program directly on a Sinclair Spectrum: saving and retrieving successive attempts at a final program just takes too long with cassette tapes and professional quality editors and assemblers - the programmer's tools - just don't exist. Rather, one uses a large, disk-based machine to store and edit programs and the Spectrum itself only for testing out the program being written.

A computer, usually bigger than the one you actually want your final program to run on, and used in this way is called a development system.

"The more sophisticated kind of development system would offer the programmer all manner of tools - for example, the ability to knit together existing sub-programs to perform a desired task - and the educational designer the ability to do more prototyping work."

MEP has commissioned a study of

development systems and their desirability but this study is unlikely to come to any definite conclusions, since the publicly available evidence conflicts. For example the Children's Television Workshop bought a large Vax mini-computer (about £100,000), but most day to day work is done on IBM Personal Computers with large capacity fixed disk drives (each costing about £10,000). In the UK, Psion - who produce many best selling games and the software which comes free with the QL - also use a Vax. Back in the USA, *Readers Digest* develop their software directly on their target machines (including the disk-based Apple II and Commodore 64) and not because they couldn't afford the hardware. One other noteworthy aspect of the MEP Software Unit's activities has been to initiate the creation of software which will take a finished programme and extract portions from it to become increasingly difficult for teachers and their advisers to find the time to examine packages in detail prior to purchase, the ability to browse will be very welcome.

Now that virtually every school has at least one microcomputer it would seem natural that the focus should turn from hardware to software. But in the time it has taken the Government to install these machines, software producers have already pushed the supported micros to the limit. Overcoming major memory restrictions on the BBC machine and the essential use of machine code to produce quality software for the Sinclair Spectrum puts up programming costs. Research Machines' computers have bigger memories, but also a bigger price tag. Educational software for the 380Z and 480Z must either be government funded or commercially viable on school sales alone.

In short, none of the machines schools have is particularly favourable to the development of first class CAL software without urgent and massive investment. By this time next year, the majority of schools owning the most popular of the three DTI machines - the BBC Micro - will probably have a disk drive. This could enable a quantum leap in the standard of software available, but disk-based software takes longer to develop and therefore costs more.



That is not to imply the end of voluntary work, a shining example of which is L, written by a group of enthusiasts from the Association of Teachers of Mathematics. L is a "mathematical" adventure game along the lines of high street best sellers like *The Hobbit*, except that as you puzzle your way through you get specific mathematical puzzles to solve. Sixteen people each spent a minimum of fourteen working hours on the design of L which took a total of eight months to come to fruition. The result is not perfect - I don't suppose even the teachers involved would claim that - but it is a major step forward.

L nicely illustrates what can be achieved if the scales are tipped in favour of the concept forming stage of software development rather than the programming stage. But here again the hardware lets us down since computer based visual images which can compete for children's attention alongside sophisticated television programs have to be forced out of all three DTI machines. Good graphics should not become a luxury and shouldn't be.

Given the increased cost of software production, the lack of funding and the absence of the necessary Government and commercial cooperation it will be a long time before there is a substantial quantity of first class education software on the market. This puts classroom emphasis back on the use of programming languages like LOGO and PROLOG and other content free software including wordprocessors.

Prolog is currently the Cinderella of content free software partly because its educational potential is still largely unproven and partly because the manufacturers of the version most available to schools have been slow to listen to the needs of education. Nearly four years after it was first suggested that the user interface of micro-Prolog was very unsatisfactory, a new one has been written by Jonathan Briggs which may begin Prolog's transformation from rags to riches. MITS (Man In The Street Interface) will be available to all existing users of micro-Prolog versions 3.1 and beyond and will be supplied with BBC and Commodore 64 micro-Prolog once they are published.

Because of memory constraints it has not been possible to add the extra friendliness of MITS to the whole micro-Prolog language. A lot of the exciting potential in Prolog and related expert systems may never be realized until schools have larger, more powerful computers. Lack of computing power also hinders the provision of user-friendly tracing and debugging facilities.

Since the most popular computer in schools - the BBC micro - is now beginning to show its age in comparison to modern 16 bit computers and their attendant large memory capacity and is certainly no longer price competitive with similar computing power available in the high street, is it not time for the DES and DTI to confer

with the rest of us about the next school's machine? Acorn and RML are rumoured to be working on machines compatible with the IBM Personal Computer so perhaps it is already too late to influence them. But compatibility with the IBM machine will automatically give software produced in the UK access to overseas markets. This in turn should make it possible for there to be substantially higher investment in CAL software.

Lack of computing power can be compensated for by combining it with other educational technology. This approach has been taken by Sue Hewer and her collaborators at the new computerized languages centre based on St. Georges School, Sleaford in Lincolnshire. Reg Brealey, an old boy of the school, has donated a new building and a major portion of the equipment which has been generously topped up by the I.E.A.

At the heart of the design is a central learning laboratory which incorporates a control console capable of accommodating up to four teachers as well as audio and visual learning units. The audio unit will eventually consist of 30 student work stations based on Tandberg 530 Tape Recorders. These have a fast search facility and are controlled by BBC Micros, thus eliminating the linear path through teaching materials which was the major factor responsible for the demise of many earlier language laboratories. Two children will be able to work at each terminal so that conversation and role play will be possible.

The video unit comprises PAL/SECAM compatible VCR's and televisions and will explore interactive video initially through tape, but a videodisc player is to be purchased and development work will proceed in cooperation with the Educational Television Unit based at Bishop Grosseteste College in Lincoln. A dish aerial is to be erected so the TV broadcasts in the main languages of the centre - French, German and Spanish - can be received direct from Europe. These facilities in the central laboratory will be complemented by a complete audio and visual workstation and a sound recording studio.

As materials development officer, Sue Hewer is only too aware that the work involved in setting up the centre was but the tip of the iceberg. And that's despite staggering dedication to the project by Tandberg who have been attending meetings over the last eighteen months. Now the aim is to produce curriculum material to go with the Longman *D'Accord* series in conjunction with teachers from St. Georges school.

In many ways the Sleaford Language Centre is a microcosm of the situation nationally. The government has made an expensive but minimal investment in hardware. That much was politics. To convince us that their aim was educational they have to spend a lot, lot more - and soon!

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| 1. TURTLE GRAPHICS<br>LEFT, RT<br>FORWARD, FD<br>BACK, BK<br>HOME<br>HT (Hide Turtle)<br>ST (Show Turtle)<br>SHOWPR<br>COLOR, SETC<br>PEN<br>PENDOWN, PD<br>PENUP, PU<br>PX, PY, PEN<br>SETPR<br>PC, SETPC<br>SS (Left Screen graphics)<br>SS (Right Screen graphics)<br>CS (Left Screen)<br>CS (Right Screen)<br>BB, SETBB<br>WINDOW<br>WRAP<br>CLEAN<br>PCOR, PCOR<br>SETX, SETY<br>HEADING, SETH<br>SETSP, SPEED<br>POS, SETPOS | SHAPE<br>EDSH (EDI Shape)<br>SETSH<br>PUTSH<br>TELL<br>ASK<br>WVIO<br>EACH<br>WORD<br>LIST<br>SE<br>LAST<br>LASTPR (Last PR)<br>BUTLAST, BL<br>PRUT<br>LPUT<br>LISTP<br>EQUALP<br>MEMBERP<br>NUMBERP<br>WORDP<br>PSET<br>PCOR<br>SETX, SETY<br>HEADING, SETH<br>SETSP, SPEED<br>POS, SETPOS | 1. NAMEP<br>/NING<br>4. ARITHMETIC<br>OPERATIONS<br>+ SUM<br>- MIN<br>* PROD<br>/ QUOT<br>FLOOR<br>FRACTION<br>2. SORT<br>J. RENAMER<br>RANDOM<br>RANDOM<br>4. DEPHIND AND<br>PROCEDURES<br>EDIT, ED<br>EDDS (EDI NameS)<br>END<br>8. FLOW OF CONTROL<br>AND CONDITIONALS<br>IF<br>REPEAT<br>RUE<br>STOP<br>WAIT<br>COUNT<br>WHEN<br>TOUCHING | OVER<br>CONG<br>OUTPUT<br>2. LOGICAL<br>OPERATIONS<br>AND<br>OR<br>NOT<br>TRUE<br>FALSE<br>8. THE OUTSIDE<br>WORLD<br>PRINT, PR<br>THIN<br>SHOW<br>SETCURSOR<br>RC (Read Character)<br>PL (Read List)<br>KEYP<br>JOYP<br>1001 (Sound Command)<br>PADOLE<br>1001 (Sound Command)<br>SETHEW<br>8. WORKSPACE<br>MANAGEMENT<br>HIDE<br>RECYCLE | PO (Print Out)<br>POALL (ALL)<br>POTS (Items)<br>PONS (ItemsS)<br>POPS (ProcedureS)<br>POTS (ItemsS)<br>POPS (ItemsS)<br>POPS (ItemsS)<br>ERALL (Error ALL)<br>ERERR (Error NameS)<br>ERERR (Error NameS)<br>ERERR (Error NameS)<br>16. FILES<br>LOAD<br>SAVE<br>CATALOG<br>ERR (Error File)<br>SETWRITE<br>SETREAD<br>11. SPECIAL<br>PRIMITIVES<br>EXAMINE<br>DEPOSIT<br>CALL<br>SETSOR |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

5 Event or collision detection (When Demons). Whenever a pre-set event occurs these demons are activated and may call a new procedure or instruction list.

6 Simple to use shape editor, allowing you to define 15 different shapes or stages of animation and then assign these shapes to any of the four turtles.

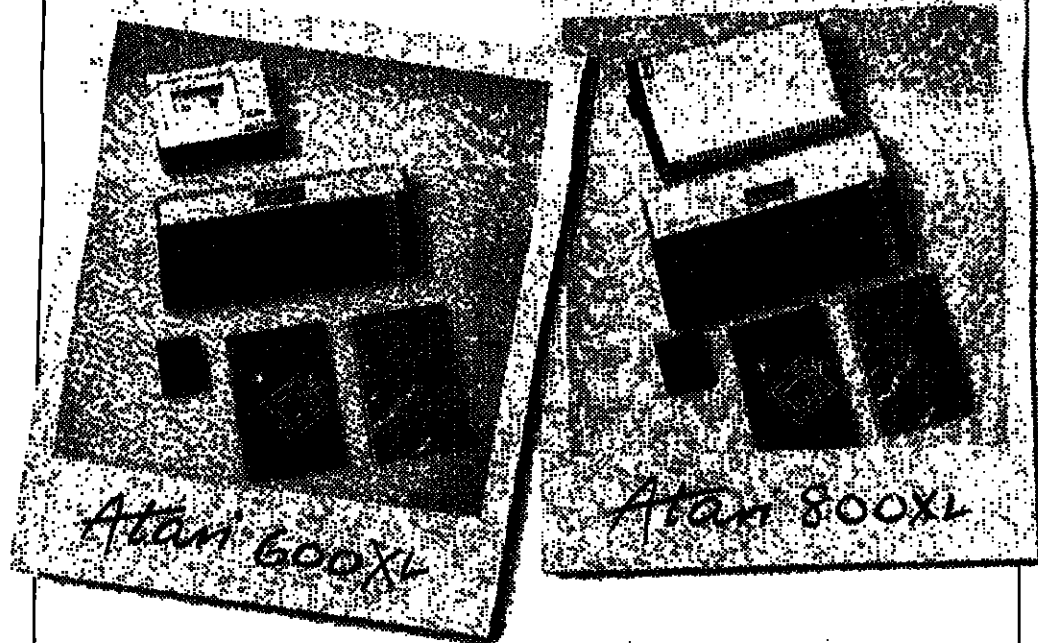
The two sound voices can be shaped using an "envelope" command.

7 Built-in interface for joy sticks and paddles allowing you to control the turtles or the sound.

8 ● ATARI 600XL LOGO system - only £135.00 + VAT, includes: ATARI 600XL computer (16K) 62-key, full-stroke keyboard with function keys, cartridge slot, joystick ports, monitor socket, expandable to 64K. ATARI 1010 Program Recorder.

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Both systems come complete with: ATARI LOGO cartridge, "Introduction to programming through Turtle Graphics" instruction manual, ATARI LOGO reference manual with a full index, power adaptors and all necessary leads.



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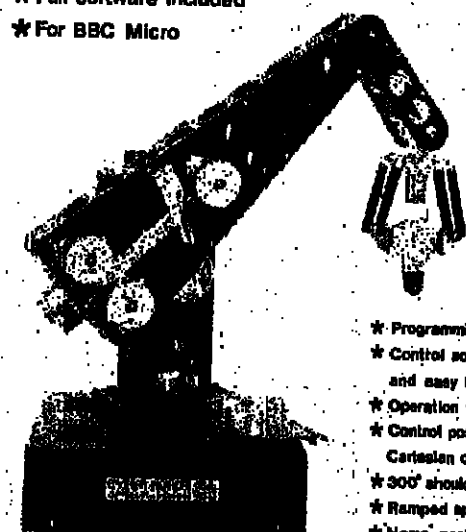
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## Large demands on a low scale

Bob Sheed scans the appointments vacant columns

I have just been reading the appointments vacant in one week's 725 and for a change I wasn't looking for a job. Instead, I was marvelling at the extraordinarily large number of advertisements for heads of computer studies: nine, more than for any other secondary school subject. It wasn't only the number, either, that interested me but the variety of activities the "successful applicant" was certain to be engaged in. In addition to teaching computer studies, often to A level, "ability to teach some mathematics" was an extensive scale; "interest in computers across the curriculum"; "technical skills to operate and maintain our computer room and imaginatively guide our computer curriculum".

This last one would also be expected to undertake in-service training, introduce computer-assisted learning and establish active contacts with local junior schools for the development of information technology. All this on a scale 3 for someone "seeking his/her first major responsibility". In fact, eight of the nine posts were on scale 3. It is not the purpose of this article to go into whether it is reasonable to expect anyone to be an electronics technician, teacher-trainer, software evaluator, liaison officer, curriculum planner and classroom teacher so early in his or her teaching career, because the answer is obvious. What I feel worth mentioning are the implications of combining mathematics or technical skills with the teaching of computer studies.

The Cockerill Report deplored the fact that computer studies was further depleting an already serious shortage of mathematics teachers. I would agree with this and add that this tendency is being unnecessarily reinforced. One of the best heads of

computer studies I know was formerly a teacher of English and, not being a mathematician, would not feel able to apply for a post which called for an ability to teach mathematics. If we want to see computer studies teachers being drawn from across the curriculum then we really cannot go on demanding mathematical and/or technical skills at the same time.

More worrying is the reference to the "computers curriculum" by which is meant, presumably, "the use of computers in the curriculum". Now it isn't that long since I was a classroom teacher and I seem to recall that "guiding the curriculum" was the responsibility of a deputy head, and a senior one at that. No one "seeking his/her first major responsibility" was asked to do it. Yet it is now not unusual to find major curriculum decisions on the educational use of computers being made on the advice of teachers who are not qualified for that responsibility. Indeed, "qualifications" was not a word to be found in even one of the nine advertisements. By contrast, there were three advertisements for heads of mathematics, all of whom were expected to be either "qualified" or "well-qualified".

It therefore appears that many teachers who are looked upon as the school computer specialist, occupy scale 2 posts or are recent appointees to scale 3. Frequently they are young. Most of them have never studied computer science or computer studies formally and need to spend time reading up on the subject, practising

their programming skills and, when they can, attending in-service courses. Excited by their pupils' enthusiasm, they run lunch-time (and break-time) computer clubs.

These admirable teachers to whom the entire academic staff of a school may have to turn for guidance are young, inexperienced, lacking in knowledge, have little spare time and

**'If we want to see computer studies teachers being drawn from across the curriculum we cannot go on demanding mathematical and/or technical skills at the same time.'**

are regarded as junior by the very people they seek to influence. They have neither the seniority nor the experience of managing curriculum change to be the architects of a coherent school policy. They are not the ones to undertake the management of microelectronics in education, in all its many and varied forms. Yet managed it must be, for without the proper assimilation of information technology into the curriculum we will see mis-spending on an unprecedented scale.

Some I.e.s.s. have seen the danger and appointed teams of advisory

teachers, whose individual skills and interests cater for the variety of demands likely to be found in both primary and secondary school use of computers and microprocessors. Staffordshire has a team of 12, Suffolk a team of six and Essex a team of four. Computer advisory services in Hertfordshire and Birmingham were established long ago and their strengths are well known. Yet there are other authorities who have no qualified advisory staff at all in this priority area. The gap between these two groups is rapidly widening.

When I first joined the Microelectronics in Education Programme I thought it might be possible to do something about this inequality which even then, more than two years ago, was very apparent. Things have not happened in quite that way. Authorities which give low priority to computers in education are quite likely to give low priority to talking to MEP coordinators about in-service training. The result is that it has been relatively easy to mount courses in areas where the I.e.s.s. is supportive and relatively difficult elsewhere.

Prospects are looking brighter though. The government has accepted recommendations that spending on in-service training needs at least to be doubled and is now examining ways in which to make additional funding available to I.e.s.s. What they are keen to prevent, of course, is I.e.s.s. which are antipathetic to INSET, channelling this money into other projects. The problem is tricky enough to have led

Fred Smithies, General Secretary of NAS/UWT, to comment recently that INSET should be taken out of the hands of local authorities altogether.

Another promising development is the appearance of the new MEP "MOMENT" courses. MOMENT is a management of microelectronics in education and aims to put head teachers or deputies with responsibility for curriculum planning and development through a training programme in which they experience at first hand a wide range of educational computer applications. Twelve or fifteen specialist presenters, one of whom is normally an HMI, lead sessions on wordprocessing, text and data, information retrieval, networking, computer-assisted learning, computers in art and music, interactive video, computers in provision for children with special needs, electronics and control technology as well as resource management, staffing and the management of curriculum change.

Typically, these courses run for about 50 hours and include a considerable amount of decision making. Course members are told that by the end of the course they should be able to prepare a written three-year plan for their schools. Head teachers who had previously confessed, with that familiar mixture of sheepishness and bravado, that they were "totally ignorant about computers" are talking knowledgeably about their school's policy for future development. This is encouraging. I hope it will lead to more senior school management taking the development of computers in the curriculum to be their own responsibility.

Bob Sheed is Regional Coordinator for Computer Education of the MEP Eastern Region.

## Software schemes

Carolyn O'Grady on ILEA's Capital Media

"If as a national programme we are trying to encourage teachers to use microcomputers effectively, all our effort is pointless unless schools can acquire software to cover the whole range of subjects and ability range." This is the view of Mike Doran, Director of the Microelectronics in Education Programme's Capital Region, which takes in a large slice of Greater London. Capital Region's concern about the dearth of good quality software is such that they recently established their own publishing arm, Capital Media, which aims to turn out disks containing about six to ten programs for a price of between £6 and £10.

At the moment the Region is running about 150 courses on computers across the curriculum a year for teachers. "We have," says Mike Doran, "one of the largest libraries of software in the country. Then at the end of the course the teachers say 'But we haven't got any of this software in our schools'."

Ideally we would like to move towards the point where software is as much used and available as worksheets - but we're a million miles away from this situation."

Publishers, he says, have been encouraged by MEP to become involved in software production and distribution, but are now worried because they are not achieving significant profits. "Many are finding it difficult to justify staying in the business."

Our advice to the publishers," he continues, "is to publish software which fits in with or complements existing schemes, whether maths or science. They could also profitably produce the 'across the board' programs or languages, which are used

sample versions of LOGO, wordprocessing systems and information retrieval packages. But this left the "curriculum specific program" the sort of program which was used to illustrate within one subject area to illustrate one important point. Schools, he said, found it difficult to justify spending the £15-£20 asked by commercial publishers for such a program, and commercial publishers found it uneconomic to produce them at that price. So where is this sort of software going to come from?

One answer, says Mike Doran, is that the I.e.s.s. could set up their own software production units. Many I.e.s.s. have the equipment and the skilled staff to do the work plus the very important contact with schools and teachers. The Capital Region is financed directly or indirectly by organizations including MEP, I.e.s.s. and ILEA (the accommodation). The equipment and the programming expertise is there so there are no development costs, only production costs for the new Capital Media.

So far the unit has about 150 programs in different stages of development: including 40 programs by Anita Straker, head of MEP Primary Project and Smile, programs to complement ILEA's individualized learning programme will be sold on disk. A typical disk will contain about six to ten programs and would cost £6-£10.

However, Doran denies that the unit is actually a threat to the publishers. Unless teachers can get hold of the enough appropriate software in the near future, the whole market will collapse, he says. "We are cultivating the market for the commercial publishers, by producing items they cannot afford to produce themselves. We are offering to produce software for them."

## Accepted philosophy

Barry Hilton on developments in the use of computers in careers education

Last year, whilst on secondment to the CCDCOIC Project, David White conducted a national survey to investigate the use which was being made of microcomputers in careers education. The aim of the survey was:

- To investigate existing uses being made of microcomputers in careers education.
- To identify available software, whether "home grown", regional or national.
- To consider the immediate and medium term need for computers in careers education.
- To provide a base upon which to design an in-service training course by identifying current issues.

From the CCDCOIC survey it soon became clear that whilst many people were using already existing commercial software, many others were producing regional and home grown programs. For the past year we at CCDCOIC have monitored and tested a wide variety of such programs. It is very encouraging to note the vast improvement in their standard. Gone are the days of the bland interest-type questionnaire. They are now being replaced by lively, colourful and flexible programs that can be cross-curricular. More importantly, they now fit into the accepted philosophy of careers education. Computa Visit, developed by the Microelectronics in Education Programme, is one such program. It is based on Barrie Hopson's mnemonic SPEEDCOP and simulates some of the aspects of a visit to a place of employment. It uses the potential of the BBC micro and uses sound and colour to good effect. It is also one of the first programs to be both designed by and used by careers teachers.

Careers work is changing and new technology must play its part. Not long ago careers advice was seen as the provision of information and the dissemination of facts. This was reflected in many of the first careers guidance computer programs. The computer controlled the student, who had to do little more than sit and operate the machine. Little was gained and the computer was misused.

Today, much of the careers work is taught experientially and students are encouraged to explore for themselves the opportunities open to them. The new generation of programs are beginning to meet this criteria and actively encourage young people to conduct their own research. They can also take into account the different levels of ability, motivation and attitude.

Microtext and Edfax enable young people to research, construct and write pages of colourful and imaginative information. The former uses an authoring language that enables simple or sophisticated interactive programs to be developed. Youngsters need no previous programming experience and the end result is a visually stimulating aid. Interaction has occurred and the computer has motivated.

It is interesting that over 50 per cent of participants on CCDCOIC courses have never touched a computer. Newcomers are always anxious to relate their worries and fears. For some the problem is obtaining access to a computer - often computer departments are reluctant to share their machines. For others the fears may be of classroom organization, the uses to be made of the computer, the quality and availability of the software or the fear of their own inadequate expertise - especially when compared to that of some of their students.

All are extremely valid points but with careful thought and planning they can be overcome. The approach one takes will vary according to personal circumstances but to ignore the micro is folly indeed.

There are two main areas of specific concern to guidance teachers:

- Computer Assisted Learning (CAL) involves the student interacting with the computer. This can be group discussions, simulations and follow-up exercises. It includes programs like Pathfinder, Supermarket, SELSTRA, Computa Visit, GB Ltd, Pre-Calcid.
- Career Assisted Administration (CAA). This takes from the teacher many of the onerous administrative tasks which at times are overwhelming. It includes wordprocessing systems, databases like Quest, Informa, Starbase and also the large national databases like Prestel.

The problem for many of us is where to start. There are difficulties in viewing the programs. Because of the ease with which they are copied, publishers are unwilling to provide hard-copy copies. Many I.e.s.s. overcome this with their

resource centres, where software can be reviewed and assessed. But assessed against what criteria? It must be appropriate to one's needs and intentions, so the individual must assess the software with his/her own requirements in mind.

CAL in material permits a variety of forms of use. However, gone are the days when the computer controlled the student. Today there tends to be two types of computer based guidance systems. One concentrates on matching peoples' interests, talents and abilities to a database of suitable occupations. JIG-CAL, Cascad and ISCOM/ISCOVER follow this pattern.

The latter can be used on a range of micros and is therefore more flexible than the other two systems. Pupils can input their own data, giving immediate access to the results. During a follow up interview specific answers can be instantly amended and a new print out obtained. This is particularly useful

when choosing O or A level subjects. The second system enables the student to control and interact with the computer. The computer becomes an educational tool. It can help solve problems and compare decisions. It provides no occupational or job information but instead it can help the student think through career options and compare decisions. One such program is SELSTRA. This helps one identify and think more clearly about the issues which are important in making decisions.

It works on the concept of "tree structures". Young people decide their options and alternatives and the computer helps clarify the relative importance of these factors. SELSTRA and similar programs are excellent stimulants and generate discussion and feedback.

One must bear in mind that the computer is not an end in itself but only a means to an end. It must be used as a resource in conjunction with teaching

materials, worksheets and other aids. The main difference being none of the others can alter the information they input or respond to a student's input.

Computer Assisted Administration packages help relieve the teacher of daily administration tasks: regular letters, CVs, form lists, work experience placements, careers appointments and visits, local industry surveys, student records and career options. Careersoft has produced a simple careers administration package which is designed to assist with school visits, careers service appointments and mark lists. The program contains a letter and list printing routines. It is very easy to use and suitable for young people to participate in departmental administration.

A more advanced package that is equally user friendly, is Starbase, a 16k ROM chip. This is an electronic filing cabinet capable of holding over 4,000 records. It will access any record

within two seconds. Once formed such records are easily maintained. Information storage and retrieval will revolutionize filing cabinets and greatly assist the careers specialist.

Finally, some of the popular makes of micro can be turned into relatively cheap Viewdata terminals. This enables one to gain access to large national Databases like Prestel. It is even possible to access other computers using the Prestel GATEWAY. One such database is ECCTIS. This is a database set up by the Open University and will eventually contain information on all qualification bearing courses in FE and HE throughout the UK. In the future it will not be the hard or software that is the most valuable part of the system. It will be to use the micro to gain access to a wealth of relevant up-to-date information.

"The CCDCOIC is the Counselling and Career Development Unit based at Leeds University. COIC is the Careers and Occupational Information Centre. Details of courses run by the Project and information on programs are available from: CCDCOIC Training Project, Leeds University, 22 Clarendon Place, Leeds, LS2 9JT."

Barry Hilton is head of Careers Guidance at Prince Henry's Grammar School, Oley and at present is on secondment to the CCDCOIC project.

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EXTRA

The opportunity to browse at home through pages of information on our television screens is becoming increasingly commonplace. There are two main services at present. Viewdata is a two-way communication system using the telephone service so that messages can be both received and sent; the system operated by British Telecom is known as PRESTEL. Teletext information is broadcast alongside television programmes and is a one-way system only; the BBC and ITV operate services known as CEEFAX and ORACLE.

Among the data handling packages available for BBC micros is a small group of programs which allow children to produce and store pages of information similar to the pages on Ceefax, Mikefax, Edfax, Electronic News, and Telebook are just some of the examples of packages of this type, although all the programs vary both in the ease with which they can be used and in the facilities that they have to offer. Mikefax, for example, is the only one of these four packages to include a display of the date and time. Telebook publishes a disclaimer in its Users' Manual which says that the main purpose of the package is not "to simulate, emulate or mimic the teletext services available through the media of telephone and television..." but "to provide a fresh medium and stimulus for children's written work".

Each of the four packages is presented in two sections. The Editing program enables the creator to add, delete, and modify pages of text, pictures, stories, or pictures. The Display section is used to display them. Sample pages included in each package demonstrate features of the program and show examples of different applications.

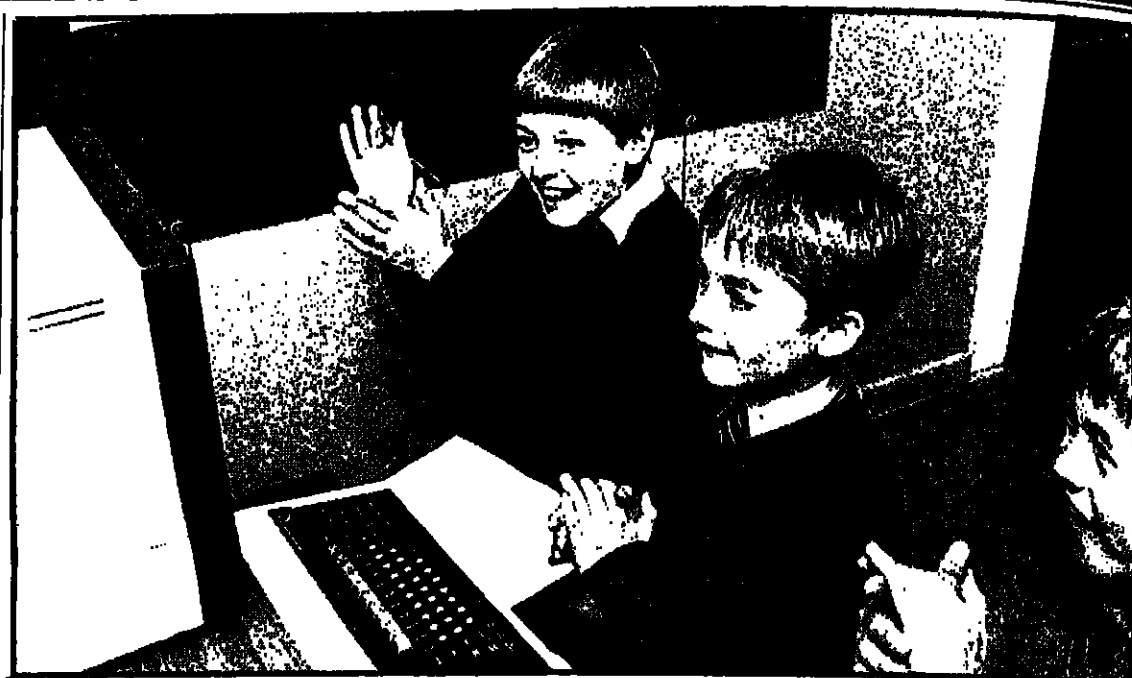
Quite a lot of sensible preliminary work can be carried out before any group of primary children actually use such a program in school. Obviously it is helpful if the class are already familiar with the whole idea of electro-

nic news. One form of introduction is to show the children the sample pages included with package but if the school has access to Ceefax, Oracle or Prestel then another introduction may be to look at several of the pages available on these systems.

Either way, children gain some idea of the different types of pages that can be produced, in terms of design and content. Alternatively, the children can be asked to watch the pages which appear on any TV in the morning. These are broadcast each week-day on Ceefax In Vision, with a longer session at weekends. A selection of pages which are available on Ceefax are shown in the programme, so it would be possible to videorecord a sample of these to show to the children later on. But what kind of activities in the primary classroom is a teletext simulation program likely to support? Clearly any project work which the children are undertaking will involve researching and recording information using a variety of media. A visit to a castle might be followed not only by craft work, drama and creative writing, but also by the production of an illustrated booklet describing various parts of the building and what was likely to have happened within them.

Another group could just as easily record their work on electronic pages, designing some to be viewed by infants and some by older pupils. The computer can then be set up in the entrance hall of the school so that children of all ages have a chance to read something about the visit. The pages can be set to cycle automatically so it is likely that anybody coming into the school, from parents to i.e.a. officers, will pause and have a look.

Another possibility is for a class of children to produce a school magazine containing news about its achievements and activities. Many skills will be involved: planning items, collecting and preparing information, designing pages, making editorial decisions about whether to commission contributions on "shoes and ships and sealing



## Electronic pages

Anita Straker and Christine Robson survey programs which allow children to produce and store 'pages' of information and pictures

wax" or on "cabbages and kings". There would need to be discussion with the whole class about the kind of material the children might want to produce. Some work which they have already produced may be suitable, but new material will also be needed. Plans will need to be made about how many pages should be devoted to which particular items.

One group of children might want to present short stories or poems, another details of sporting activities, another descriptions of a visit made outside the school. Recipes for making sweets is another idea and a section of pages which contain jokes is usually very popular!

The planning sheets which accompany each of the packages will explain how to prepare the material. Children need to be told about the features which are available: colour, flashing characters, double height text or graphics. It is probably helpful to try to produce on paper more pages than will actually be needed, so that a good balanced selection can be made. It will be necessary to take into account what has been represented fairly recently in order that something different is provided.

At this stage small groups of children can take turns to enter their pages. At least three children are needed to work together at the micro, one to hold the planning sheet and to give instructions about what needs to go on the next line, one to use the keyboard, and one to check by watching the screen that everything is going to plan.

Ceefax simulation programs usually contain a print-out routine. A printer can help by providing copy to be taken away for checking while the next group of children takes its turn at the keyboard. All the pages can be saved and edited later so that they do not need to be completely finished at the first attempt.

Finally, the magazine can be presented to other groups of children. Positioning the computer in the entrance hall is not the only possibility. It may be more appropriate to place it in a library or resource area or even to move the computer from class to class for half a day a week, so that other children can read and view and interact with the magazine. Perhaps two or three children from the class that produced the magazine can accompany the computer round the school, to guide other children through the materials and help them to select pages which they would like to view again.

Producing a news magazine of this kind is only one of several for a teletext simulation program. The program can be used as an electronic noticeboard perhaps for a parents evening, for an open day or for a school fair, guiding people where to go or describing what is available in various rooms.

Sometimes a teacher might prepare pages of hints, examples, questions, answers, or even a list of resources and where to find them, which children can refer to when they are working on a particular topic. Instead of asking their teacher, children can be encouraged to find out information for themselves by going to the computer in the corner of the classroom and selecting the appropriate display page.

When the school bookshop has some new books for sale, reviews can be prepared, or extracts selected, for

entering on pages in the program. Branching stories of the tracker book kind can be produced. Pages linked to a project which children are undertaking can be incorporated into a sequenced display, and set up alongside other material arranged on the classroom wall. The dynamic display contrasts with the more traditional static one, and allows children in the class to interact with it.

If the school is fortunate enough to have more than one micro the use of the program can be linked to children's creative work in yet another way. A class may be involved in the dramatization of a real or an imaginary event: reliving the battle of Hastings, being shipwrecked on a desert island, exploring a new planet, or going to a Buckingham Palace garden party. News about the event as it develops at the school on one micro, and can be updated by the addition of new pages, or by the modification of old ones, created on the second machine. The possibilities are limited only by the imagination of the children.

If teachers in a primary school were looking for computer software which would provide children with a new means of communication what should they choose? Some of the teletext simulation programs which might be considered have more sophisticated features than others, so any decision will depend partly on the age, ability and experience of the children with whom the package will be used.

In Edfax, Mikefax, Electronic News and Telebook the Display section of the program is easy enough to use and operate. Edfax and Mikefax, in common with most teletext systems, both use page 100 for the main menu, from which subsidiary pages can be called. Edfax allows up to 80 display pages. The strength of Mikefax is its ability to cycle up to 48 pages automatically. Electronic News uses a double menu system, which takes a little longer to learn, but which can be an advantage if the children are aiming at a story-book image rather than a simulation of Ceefax. Telebook permits display of at least eight "books" each of 15 numbered pages which can be "unlocked" either manually or automatically.

Each of the four Editing programs contains broadly the same features: text, graphics and background colours can be chosen, graphic characters can be separated or in contact with each other, both text and graphics can be made to flash and text can be concealed. These variations are obtained by combinations of the shift, control and function keys, and function key labels are provided with each program. In all four programs, the control keys generated by using the function keys are invisible on the screen, and Edfax alone lessens the confusion this can cause by printing an explanatory message on the top line of the screen when the cursor is over one of these invisible

continued from previous page

characters. The entering and colouring of text is relatively easy in each of the packages, although careful preparation is needed. Edfax, for example, does not have a simple facility for inserting or removing characters or lines, whereas in Electronic News this is made particularly easy to do. The use of the graphics characters needs even more planning, and graphics planning sheets are provided with all the programs together with tables of the graphics characters. These are obtained by pressing the appropriate function key(s) and any of the lower-case or numeric keys.

Edfax provides an alternative method of constructing a graphics character by selecting its "Define Pixel" mode. The six pixels (tiny rectangles) which make up each of the 40 x 25 blocks on the screen are turned on or off by using the keys which are lettered E, R, D, F, C and V. The method is very laborious for primary aged children but could be a useful refinement for older pupils.

Mikefax has an attractive and easy to use drawing mode which enables children to draw freely using the cursor keys in an Etch-a-Sketch fashion. Another feature in the latest version of Mikefax is its ability to "cut and paste" on the screen from one page to another.

As might be expected of a program aimed at providing "a fresh medium" for children's written work, Telebook is unique in providing simple wordprocessing facilities. There are four Writing/Editing modes each having its own distinctive features which can be changed at any time by pressing the TAB key. Text can easily be inserted or deleted and then highlighted by the use of colour or the flash facility.

The documentation provided with each package is generally good and informative. The Edfax manual explains clearly what is included in the package and how to run the various parts of it. Step-by-step instructions for loading and editing are clear and illustrations of the screen displays in both this and the Mikefax manual are a welcome reassurance that the user has correctly interpreted the instructions! The Electronic News guide is comprehensive.

In addition to its User Guide, Telebook has five double-sided "help" cards designed for use by children. These summarize the facilities of the editing program and explain, with examples to follow, the simple stages necessary to produce the various effects. The User Guide shows very clearly, with specific examples on grids, the characters needed to create the pictures illustrated in the Graphics book, and together with the cards, these form an extremely clear explanation for younger children (and less confident teachers!) of how teletext effects work.

The completed pages in all four packages can be saved and printed out, and all will simulate as much work away from the keyboard as at it.

To summarize, the main advantages of Edfax and Mikefax are that they use the page numbering system of the broadcast services and could familiarize children with a system they are increasingly likely to meet outside school. Mikefax is compatible with all levels of Ecomet and can download pages from teletext using an adaptor. Its "drawing" and "cut and paste" facilities are added attractions for primary schools.

Electronic News is designed for tape operation and makes useful suggestions for schemes of work in school. The documentation of Telebook is especially easy for children and the editor offers better wordprocessing facilities than any of the other systems. Edfax is published by Tecmedia Ltd, 5 Rodney St., Loughborough LE11 3DU. MEP subsidised version for UK schools £23.88. For others £34.88. Disk only £1.

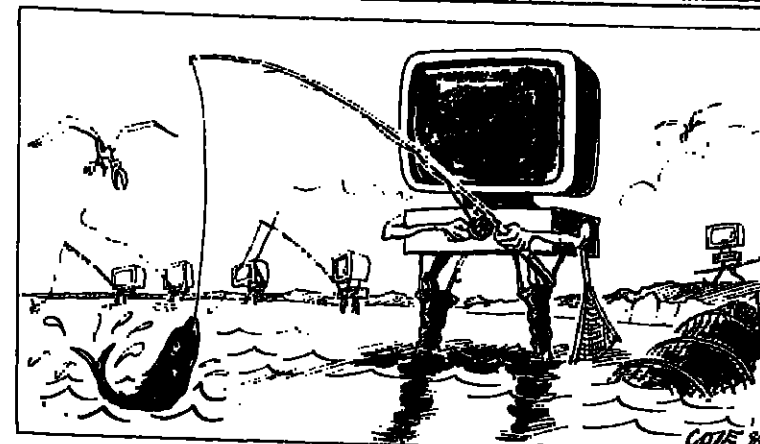
Mikefax is available from Collin Rowling, 2 Tamar Road, Haydock, St. Helens, Merseyside WA11 0HR. Disk only £15 plus P+P L.e.a. licence £200. Electronic News is published by Nottingham Educational Supplies, 17 Netherhill Hill Road, West Bridgford, Nottingham NG2 6HO. Cassette version £15. Disk version under development.

Telebook is from 4MAT Educational Software, Linden Lea, Rock Park, Barnstaple, North Devon EX32 9AQ. Cassette £15 + VAT. Disk £17.65 + VAT.

Anita Straker and Christine Robson work for the MEP Primary Project.

continued on next page

EXTRA



## DIY Prestel

and its accuracy: the structuring and flowcharting of the information into a hierarchical database; creative writing; editing the information; inputting the information electronically to the database (keyboard skills etc); the design of viewdata pages; the creation of hierarchical indexes.

Quite an impressive list, not least when you consider that these boys are classed as having difficulty with their English! Examples of microviewdata bases created by other schools can be

found on Prestel, along with "Fishing", on the ED.IT magazine on page 48841.

The ED.IT magazine is a current awareness service for teachers carrying information about the developments of Information Technology. Prestel and Microviewdata in schools. As well as the DIY Prestel section, there are other sections of the magazine carrying news of Information Technology courses and projects in schools, and also news and details of what other

schools are doing with Prestel, microviewdata and Information Technology in general.

ED.IT (\*88841 #) is part of the new Prestel Education Service on \*888 # being developed jointly by the Council for Educational Technology and Prestel. The service will be launched in January 1985, along with a special package for education costing £49 per quarter, which will pay Prestel standing charge, and give access to the Prestel Education Service and Prestel Microcomputing, up to 40 hours peak time use a year and an allowance of up to £40 a year for schools to spend on charged Prestel frames eg Telesoftware etc.

In addition to the tariff there is also a special equipment offer of everything a school needs to convert its microcomputer to receive Prestel. Details of the scheme will be circulated to schools this term.

If four special needs boys can create an informative and imaginative database about fishing using microviewdata, then it would seem well worth while exploring the potential of viewdata-base creation in wider curriculum contexts.

Jo Taylor

Jo Taylor is Curriculum Development Researcher on ED.IT, a Council for Educational Technology Project.

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# Computer space



## Martin Owen canvasses the views of a group of teachers on the deployment of micros within a school

Computers are still a scarce resource in education. Even after substantial local and national initiatives most secondary schools will have less than one microcomputer per one hundred pupils. If all the existing and potential uses of a microcomputer are to be realized in a school, important decisions need to be taken about the deployment of the computer resources in the school.

This article springs from a 150 hour course for teachers who have or will have responsibility for the use and management of computer resources. They are drawn from secondary schools in the Greater London area with current school provisions varying from one to ten microcomputer systems.

There seems to be three principle methods of deployment now being used although hybrids are common.

The first is to deploy the computers permanently in a single room. This may be a dedicated computer resource room for the whole school or it may be the existing teaching room of a member of staff or a department. Computers are then held centrally as a resource for the whole school and physically transported, often on trolleys, to the required teaching room. The third method is to allocate the computers to individual departments who then make their own decisions about deployment.

The principal advantages of having the computer resources centralized are to do with the care and ease of use of

hardware. The systems can be permanently wired together. Some systems consist of four or more separate items with several different kinds of plugs at the back of the main computer. Users may find assembly of the different parts difficult. The machines are felt to be more reliable because plugs and sockets are not frequently tugged and pushed, and nor does the equipment suffer from bumps in transit.

It is also possible to furnish the room with more appropriate fixtures and fittings. Electrical socket outlets well-sited in sufficient numbers are convenient and safer. The appropriate electrical power loading can be taken into account, and trailing cables and multi-way adaptors are avoided. The room can be made more secure against vandalism and theft than the rest of the school building.

Monitors can be well positioned and large screen monitors for group viewing included. The video display unit for each computer can be positioned at a comfortable working position instead of a flat desktop adjacent to the keyboard. Similarly comfortable seating for typing is more likely in a dedicated room.

An important advantage offered by a computer room is the cost savings involved in the possibility of networks, in which all the computers share the expensive peripheral devices like disk drives and printers, are easier to achieve. Networking is possible across several rooms but the costs saved by sharing peripherals is offset by the cost of installation, although other advantages of networks are still gained.

Three advantages for the teacher were found in this centralized deployment of computing. Less expertise and time is demanded of the teacher. They merely have to turn up and turn on.



The situation in which they work with the computer is invariant, thus they can adopt a particular classroom management style which will not have to change because the computer(s) are located in a different position with respect to the teacher and the student.

Last and probably most important, if the computer hardware is centralized then it is likely that the software will also be centralized. This will make a greater range of materials available to all teachers, avoid unnecessary duplication and promote awareness of the range of possibilities that the computer can offer.

There are, however, several disadvantages to having the computers in a computer room. Extra space may not be available. In one establishment the computer room is a former stock room; in another it is a little used hall which is draughty. If the computer room doubles as another teaching room many of the advantages are lost.

Dual use is especially unsatisfactory if the room happens to be "Mr. X's teaching room" and even more so if Mr. X is the teacher of computer studies. Computer laboratories are often dominated by the computer studies department, or by a computer elite who monopolize the resource by timetable booking of the room and allow little opportunity for others.

Alongside these problems there are others associated with the booking of equipment. There is evidence that considerable advanced planning can be required.

There are also disadvantages to having a computer room. Not all uses of the microcomputer require more than one microcomputer. Many of the examples of CAL which are currently available are designed for a more common situation: one computer per classroom. Moreover, most teaching resources are likely to be found in other rooms. If all the computers are kept in a computer room then it is difficult to use it as an adjunct to a laboratory experiment or as a control device in technology lessons.

Many of the disadvantages of the computer room are overcome by having mobile computers which are available for use in the whole of the institution. The user can then teach in their own room. The resources are available simply and can be used by a number of teachers simultaneously.

This method also allows the computer to become a commonplace aid, booked like the 16mm projector or the VCR. It is seen moving around the school and both teachers and students could begin to feel it is normal for a computer to be seen in a classroom. The computer, when not in use, is also available for staff to try out without disrupting a class. It has been particularly advantageous if the unused computers are located in an area where teachers do their preparation.

There are, however, numerous disadvantages to this system, many of which arise from moving the computers. Stairs are a problem. This is especially true if the computer is mounted on a trolley for ease of movement at other times. The movement of the computer presupposes that there is a member of staff who has the time to move the equipment from place to place.

The problem of booking time with the computer remains. Departments with a long term commitment can still monopolize the resources. Furthermore someone has to administer the booking system and, of course, take responsibility for the equipment. This is easier than organizing the use of a computer room, however, because, if there is more than one computer system, they can be in two places at one time.

The third method of deployment, allocating resources to a department to deploy as they see fit, dilutes most management problems. The resources do not have to be moved much (if at all) and they are arranged as the users require without having to compromise because of totally different styles of use. In one school, equipment is individually tailored for a department's particular needs; thus a department which needed a computer to control external devices is able to purchase a computer which suits that purpose, and computer studies, which needs access to languages other than BASIC, can have a system which fits their needs.

There are advantages in terms of staff development as well: departmental colleagues can give local and particular advice and exchange views and information. Resources needed for use with the computer are at hand, thus physicists had no problem in using the computer for data-logging in experimental work.

The disadvantages to this method of allocation is that it may deprive certain departments of access to computers. A humanities department for example would probably not place a high priority on acquiring a computer and thus computer use would not be encouraged in that department.

Unless a school is particularly well endowed the dilution of the resources across departments may mean that computers are only ever seen singly. There are times when it is useful to have a number of computers together in one location, particularly when learning a computer related skill such as programming and wordprocessing, or in investigatory work such as computer database interrogation in history. The database is easy to organize if it requires the cooperation of several departments.

Last, this method of deployment can be uneconomic. Without centralized monitoring, others in the school would not know when a computer was not needed by a department and thus available to others. Software which could be potentially useful to others in the school might not be circulated.

All of the advantages and disadvantages of the varying methods of allocating the computer resources in schools in this article are viewed from the teachers' perspective. There was no discussion about factors affecting student access to computers.

Those teachers who had access to computers in their departments felt they had most opportunity for computer usage and personal development, those teachers who were in departments who only wanted occasional use of computers felt that their needs would be best met by having mobile equipment. All felt that their ideal would be to have hybrid systems which would give all the benefits and few disadvantages but they recognized that that required a significant increase in the number of computers in the schools.

*I would like to acknowledge the assistance of the teachers on the RSA Use of Computers in Education Certificate Course at South Thames College.*

*Martin Owen is Lecturer in Educational Computing at South Thames College, Wimbledon.*

The Croydon TVEI project operates presently in four 11-16 schools and from 1986, also in Croydon College. Pupils pursue either a business studies bias or a technology bias within the scheme. In either case, one third of the time spent on vocational education is concerned with Information Technology. It has been one particular concern to evolve a system for the teaching of IT which both complements the activities of our business studies and technology colleagues, and takes advantage of MSC support for resource-based learning approaches (subsidized by enhanced funding); individualizing instruction (subsidized by enhanced staffing) and a practical, problem-solving approach (assisted by the use of projects and new assessment instruments).

When considering any particular scheme for computing or IT, it is important to be aware that there are differences of interpretation of Information Technology. IT is increasingly used as a portmanteau term for the entire spectrum of microelectronics and its applications from computing to robotics. It is also sometimes used to mean "computer appreciation".

There are dangers in both interpretations. The former leads to attempts to cover too much ground, the latter to a mistaken view of what is "easier" for pupils of below average ability. It is far more difficult to cope with abstract data concepts such as "privacy" or "data protection" than some of the more conventional ideas in programming or appreciation courses.

We ought to consider, in fact, three categories of computing and systems experience. There are, first, the information users. The needs of this group, the majority, can be met by courses and materials such as those being piloted by the 11-14 Information Technology project in Croydon, and similar work in other authorities.

Schools have always considered that there is a body of knowledge and a group of skills which should be acquired in history, geography or home economics by those pupils who will not study them further, and where schools have been prepared to take on the responsibility of finding adequate time for IT in the first three years of secondary schooling. It is possible to achieve an equivalent standard of "information literacy" for all. Within the lifetime of the TVEI projects, pupils will be coming through to the beginning of the fourth year of secondary schooling who have achieved this standard.

Beyond this point there is the opportunity for two kinds of specialization - that of the Information Provider and that of the Systems Provider. The latter will pursue an option in computer studies in which he or she will develop sufficient understanding of the operation of computer systems to evaluate packages, even to write programs in an appropriate procedural or declarative language.

The information provider, on the other hand, will possibly pursue an option in Information Technology in which he or she will gain sufficient understanding of the nature and structure of information to be able to make recommendations on the use of appropriate packages, on the choice of the structures, and in general on the solution of aspects of IT for the solution of particular industrial and commercial problems. Pupils might go on to study education, librarianship, or systems science, and will eventually be concerned with solving problems with computers.

This is not the traditional distinction between the programmer and the systems analyst. Whereas the systems analyst will be concerned with the details of data efficiency, sorting algorithms and so on, the information technologist will have more of the characteristics of the readers' adviser in a library: a knowledge of relevant information sources and how to use them most effectively, together with the ability to assist other people to carry out research and proficiency in problem solving.

There is indeed a relationship between the two kinds of specialization: whether it is like that between English language and English literature, pure and applied mathematics, or geography and geology is not yet clear. It seems that the current view of IT is that computer studies is a specialist activity for the few, and Information Technology a core activity for all; however, this view seems to arise from a technical model of computer studies and a computer appreciation view of IT.

# For the Information Provider

## A P Scott on a TVEI scheme

Within the Croydon TVEI scheme we have chosen to employ the model of the information provider is the person who is sufficiently expert in the uses of Information Technology that they can apply their knowledge to the formulation of solutions (they will be expected to do more than appreciate the information); as opposed to the systems provider approach we do not expect any programming skills or even any deep knowledge of the nature of the computer at least at 16.

To develop information provider skills we are adopting a resource-based learning approach in which the motivation for individual and group research arises from pupil attempts at fairly large-scale industrial or social problems. For example, pupils will be asked to design a consumer advice service for a local shopping centre.

This will require them to consider the potential contribution of communications, databases and spreadsheet programs to such a service and incidentally involve a review of the

present uses of IT in retailing. Other real problem-solving projects we are considering include the design of a community library and information service for a small industrial estate, the construction of an on-line careers database, and an analysis of the information needs of a public planning enquiry.

Each of these projects needs to be tackled in a fairly systematic manner, and we are suggesting that teachers follow a reasonably standard schedule:

- CASE STUDY APPROACH**
- 1 Presentation of Problem (Comprehension, reformulation)
  - 2 Presentation of Examples/ (Context of problem, teaching of facts)
  - 3 Group Research on Example/s (Learning relevant background facts)
  - 4 Re-statement of Problem (Groups allocate tasks to individuals)
  - 5 Individual Work on Problem

- (Research skills, reinforcement)
- 6 Group Work on Solutions (Collation of facts, views, allocation of reporting tasks)
  - 7 Presentation of Solution
  - 8 De-briefing on Case Study

Each of the schools in the project has been equipped with a resource-rich environment in which the pupils can conduct their research. In particular one room in each school is set up with an eight-position Research Machines network based on a 20Mb hard disk, 256K silicon disk workstations and a wide-carriage printer. Pupils will also have access to the Time Network for Schools for electronic mail and on-line databases, to Prestel, and to a wide range of sets and single copies of text books.

The RML equipment comes with a substantial amount of software, including a wordprocessor (Wordstar), database system (Quest, Sir) and a spreadsheet program (Multiplan), which we are augmenting with additional materials: case study software,

demonstration expert systems, and authoring system software for teachers to provide individual study material for pupils with special needs.

We hope that the provision of individualized instructional materials will be an increasingly significant part of the scheme as the project progresses.

To further this aim Croydon College will have one IT room equipped in similar style to the schools (although the details of the equipment may differ, it will be a resource-based learning environment), and pupils going on to the college will continue to study IT as part of their TVEI core curriculum, unless they are pursuing A level computing or a BTEC course in which IT is already integrated.

As to the broad interpretation of Information Technology: IT is able to benefit, in the Croydon scheme, from the heavy emphasis on equipment which has been given to the teaching of business studies and technology. Thus, pupils taking technology options are able to make use of computer-based engineering facilities including CAD equipment and CNC lathes linked to BBC micros, and pupils taking business studies options are able to make use of an electronic office in each school.

*A P Scott is senior teacher for Information Technology at the Croydon TVEI Project.*

# Introduce your kids to another friendly teacher.

The Mr. Men and friends, have all gone back to school. They're learning a lot. So they can help youngsters, from 4 upwards, to an enjoyable start on the rudiments of reading, and the basics of arithmetic.

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Telling left from right, and working out simple routes can confuse young children. In these four games they learn by giving directions to the Mr. Men. Watching what happens on screen is fun. The games progress in difficulty as the children get more expert.

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Some sorts of words can cause difficulty for children just starting to read. This double cassette pack takes an amusing look at comparatives and superlatives. It also has fun with opposites and keeps Mr. Bounce leaping about with positional adverbs. Fourteen games in all, including keyboard overlay and illustrated book.

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Also available: First Steps with the Mr. Men - games for pre-readers. On cassette for the BBC B, Electron, C64 and Spectrum 48K. £8.95

## COUNT WITH OLIVER

Two games in which cheeky young Oliver learns to count and do simple sums. Choosing different toys in various colours requires single digit answers from the players.

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Two futuristic, arithmetical mind stretchers. In SumVaders aliens in numbered space ships drop numbered robots. Correctly added or subtracting the two numbers destroys the robot. If you are wrong or late the robot lands. Correct answers are displayed. Five levels of difficulty.

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SOFTWARE FOR ALL THE FAMILY  
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# LEONARDO WOULD HAVE LOVED IT!

A full LOGO for the BBC model "B" from Logotron.

LOGO is a computer programming language, which appeals equally to children in primary school or to computer scientists at the Massachusetts Institute of Technology. Using LOGO, you unconsciously absorb advanced mathematical ideas and fundamental principles of computer programming. LOGO has been available on microcomputers only since 1982. Only this year has it been made available on British home computers like the Sinclair Spectrum and the BBC Micro.

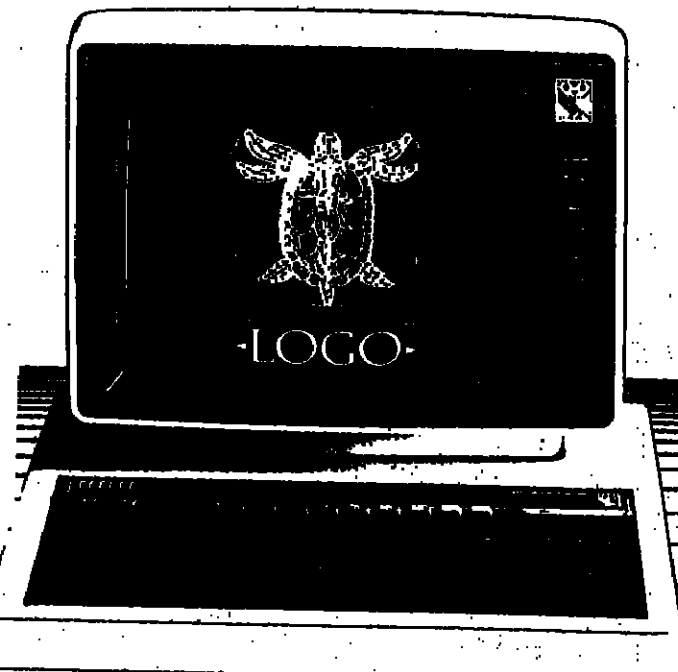
Leonardo da Vinci would have loved it because LOGO gives full rein to a child's creative imagination, using visual images to convey profound ideas. LOGO could do for computers what perspective did for pictures, bring them alive.

Logotron's LOGO for the BBC "B" was written by LCSI/SOLI, the software house responsible for LOGO implementations for Atari, Apple, IBM, Sinclair, Coleco, and NEC. It's the closest there is to an international LOGO standard, with turtle graphics and full list processing. The software is contained on a single 16k ROM, written in 6502 machine code, fully compatible with the 6502 second processor unit and Econet. Facilities are provided to drive floor turtles, create and use data files, and access routines written in machine language. Full access is provided to the BBC micro's operating system. An optional sprite board, also provided by Logotron, can be used to handle video output and provides more than 30 programmable sprites, allowing true animation.

If you want to know more about LOGO, send for a descriptive leaflet and price list.

To: Logotron, Dept. T8835, 5 Granby Street, Loughborough, Leicestershire LE11 3DU, England.

**LOGOTRON**



Please send me further information concerning Logotron's LOGO for the BBC Model "B".

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APR 11 1985







## Computers, Information, Awareness: a practical course

Peter Ayre and Tony Payne

A three-fold package of student text, teacher handbook and software providing a practical introduction to the use of computers in real-life situations and to the concepts and technology of computer utilization.

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Publication May 1984

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Teachers and parents find the qualities they demand from a computer language in Logo. This well-designed, clearly written guide is the ideal introduction.

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ANDRE DEUTSCH

Available now!

There is an irony in teaching about the problems of the world's poorest using the technology of the world's richest. However, micros are here, opening up new horizons in learning, and the excitement of zapping aliens and massacring monsters can be harnessed in constructive programs.

Development education focuses on different cultures, values and ways of life in the light of our interdependence. It includes the learning of facts like capital cities and climates. The computer can be an endlessly patient teacher of these, using a program like *World Wise* from ASK (Applied Systems Knowledge).

But it is in handling such data that the subject should really come into its own, and it is precisely here that its essence often gets lost. Finding facts and figures and number-crunching can so dominate the children's attention that they lose sight of the lives behind the numbers.

Once again, the computer can come to the rescue, both by storing large quantities of material and by manipulating it as required. This happens in specific database programs like *Diet* from the Microelectronics in Education Programme and in content-free ones like *Micro-Query* from the Advisory Centre for Computer Based Education. With their help the user can get through to the messages behind the facts.

Other content-free computer packages can support development education too, for instance the binary tree approach to classification of *Acornsoft's Tree of Knowledge* or *Seek and Think* from ITMA (Investigations into Teaching with Microcomputers as an Aid). These can be used to examine homes or transport round the world, while a hiding program like *ITMA's Scene* can be the basis for reconstructing a third world game.

However, development education is most effective when the children identify with the situation being studied and explore the "What happens if...?" approach to learning of interactive computer simulations. Among the first development education simulations were several farming ones, as in the case of Chelsea College's *Computers in the Curriculum* and the Geographical Association's *Package Exchange*. From the same sources came some sifting simulations, deciding the locations of a mine or village, and other pioneer programs. Then Nelcal entered the field with its simulations *Developing Cities* and *Tourism*, which are part of the "Geography and Change" secondary series.

Some BBC Software simulations are due out this month to accompany the *Introduction to Geography* radio series for 10 to 12-year-olds. Among these, *Nomad* simulates the grazing decisions of a nomadic cattle-herder on the desert fringe. Later programs, to go with the television series *Science Topics* for 15 to 17-year-olds, will include one on fighting malaria and another on feeding a community.

Survival programs, too, can include many development education ideas. Above all, they can help us to see another's point of view. Sinclair's *McMillan's Survival* and *Gim's Urban Fox* (due out soon) can fit into the classroom in a variety of ways and emphasize the interdependence of life.

All simulations include a man-made model of the situation being studied. This may or may not be very realistic or include all the key factors, but its importance depends on how the simulation is to be used.

Many are intended as one component in a varied teaching package.

## Mind storms

continued from previous page

perceptions. Conventional learning games on the computer are enjoyed by the children, they are motivating and engrossing, and the children may even learn something. But the wonder of the situation for the adult observer is focused on the computer. With Logo and other open-ended, exploratory or creative situations it is the children and their achievements which form the centre of attention.

All these observations were derived from a study in which the children were withdrawn from the classroom for their Logo sessions. They point in the direction of the worth of the computer, rightly used, as a medium of communication between child and child, and between child and teacher. That is, to be used, necessarily limited,



## Survival programs

Patricia Shephard suggests how computers can be used in development education

These need to be attractive to the users and to provoke exploration and analysis. The danger is that the hypnotic power of the micro may block out other considerations.

Often preparation and follow-up are crucial if the result is not to be the reinforcement of simplistic ideas and prejudices. Nelcal's *Tourism* illustrates this. After running it, students may assume that the only consideration for a country in developing its tourist trade is the financial profitability to follow. The accompanying booklet warns of this and suggests work away from the computer to give a more balanced picture.

Development education is about attitudes and perspective as well as about knowledge. If computer programs are to stand alone, care must be taken over unintentional messages (like rich is best) which may be extracted. We classify our films; perhaps some computer programs could include a health warning that they should be used only under the supervision of a well-briefed teacher.

Attitudes and prejudices about other cultures start being formed at a very young - even preschool - age, so development education in schools should start as young as possible (see David Milner's *Children and Race*, Penguin 1975). Also, primary schools are better geared to cover the kind of interdisciplinary work involved.

Most existing programs are for secondary schools, but the Centre for World Development Education (with financial supporters including Oxfam) is coordinating a project to produce computer material in development education for younger children - from eight years old.

This started with collecting information on existing work and examining what the possibilities are and where the main needs lie. A team of volun-

teers was built up, mostly practising teachers but also specialists in computing and in development education.

They are keen to support all good material to be used with micros in development education, and are also developing ideas for more. Current projects range from producing support material for existing content-free computer programs, through games or water or ecology and some databases, to more elaborate packages built round simulations of desertification or life in a Third World village.

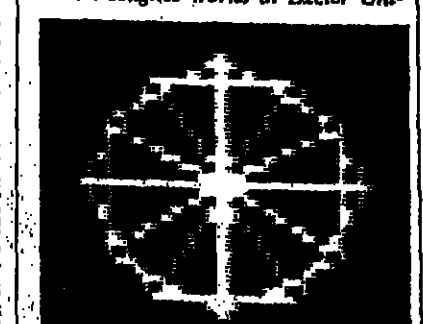
Micros can help us use information effectively. They can take off our blinkers of time and place. More people are needed - both with new ideas to be developed and to be involved in existing projects - to help produce what Henry Liebling has called "Software for Survival".

**References:**  
ASK: Applied Systems Knowledge, London SW15; MEP: Microelectronics Education Programme, Newcastle upon Tyne; AUCBE: Advisory Centre for Computer Based Education, Hatfield; Acornsoft, Vector Marketing, Wellingborough; ITMA: Investigations into Teaching with Microcomputers as an Aid, College of St Mark & St John, Plymouth; Chelsea College Computers in the Curriculum, Fulham, London SW6; GAPE: Geographical Association Package Exchange; Nelcal, Thomas Nelson & Sons Ltd, Walton-on-Thames; Loughborough: BBC Software, BBC Publications, London SE1; Sinclair/McMillan, Sinclair Research, Cambridge; Gim & Co Ltd, Aylesbury; CWDE: The Centre for World Development Education, London SW1.

Patricia Shephard is Computer Materials Coordinator for the Centre for World Development Education.

the power of the computer in these vital areas. An important area for future research then, must be the appropriate introduction of Logo into the classroom setting and its integration into the ongoing academic and social activities of child and teacher.

Martin Hughes works at Exeter Uni-



This four page newsletter has been inserted at the expense of the School Mathematics Project and Cambridge University Press to keep teachers and others involved in mathematics education abreast of the Project's activities.

9 November 1984 No.21

# smp news

In this issue: Publication timetable for the third year SMP 11-16 materials

## Courses for teachers

Following the success of the 1984 courses for teachers, three residential courses have been planned for 1985. Designed for those adopting SMP 11-16 and for those who simply want to be better informed about the new approaches it contains, these events put teachers in direct contact with members of the writing team and provide an opportunity to discuss some of the material in detail.

At the 1985 courses the opportunity to discuss the book-based material for years 3, 4 and 5, which by then will have begun to appear, will be particularly valuable for those who are already using SMP 11-16 in years 1 and 2. Users who attend courses are often glad to be able to share and compare classroom experiences (and exchange hints and warnings!).

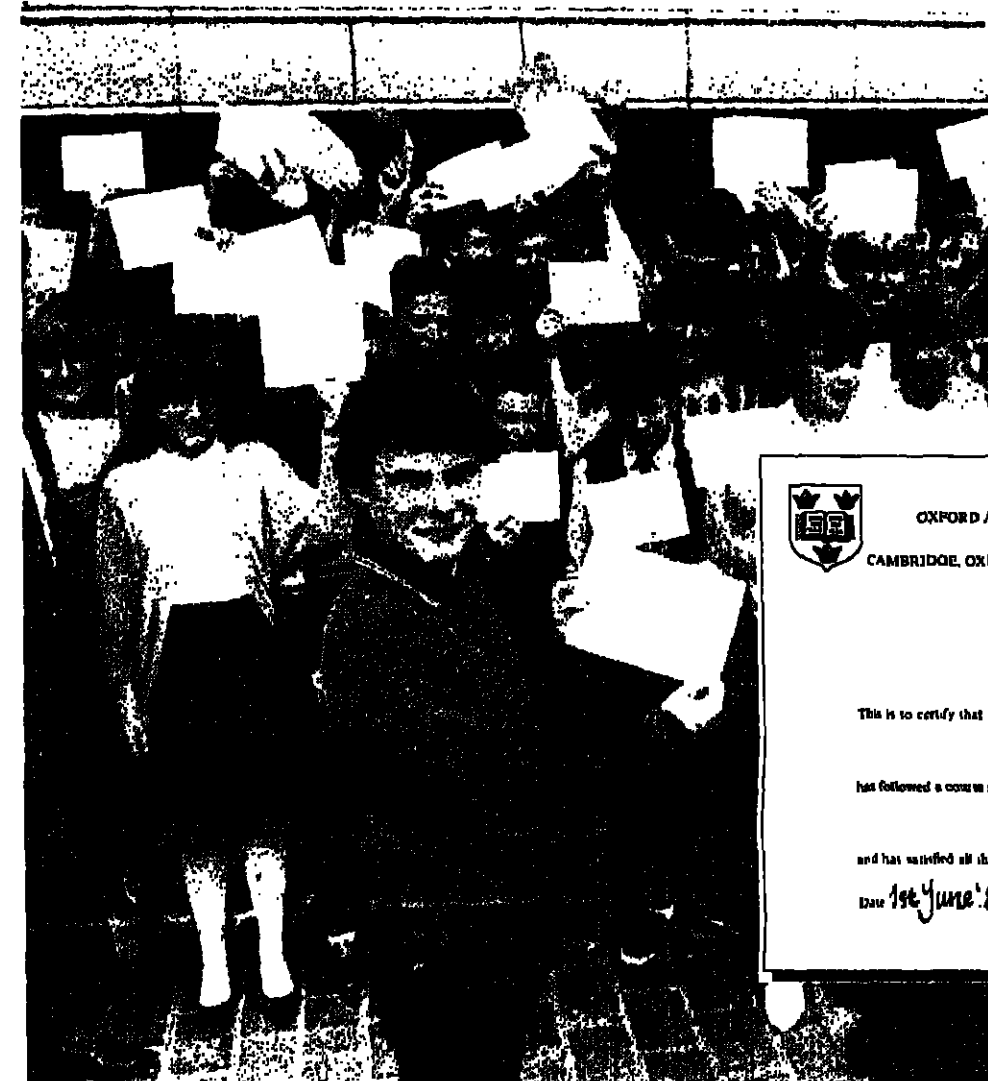
These are the dates and locations for 1985.

26 to 28 March Garnett College, London SW15

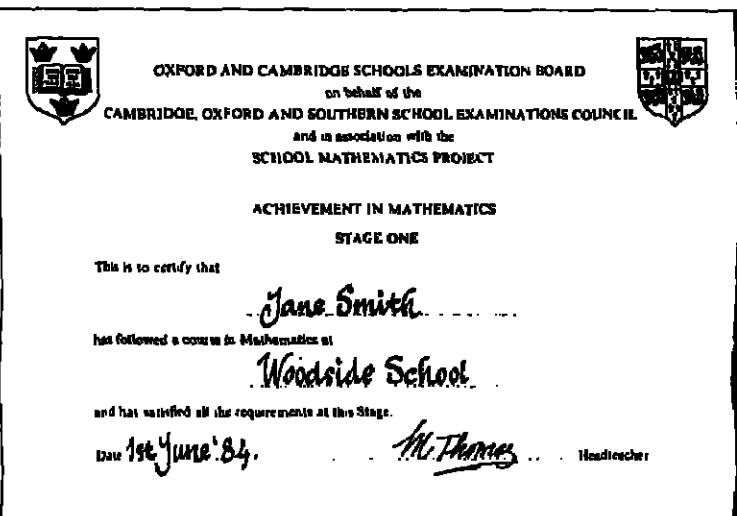
1 to 3 April Wentworth Castle, near Barnsley

8 to 12 July Beaumont Hall, Leicester

The 1984 courses were very well attended and we anticipate a high demand for 1985. So if you are interested, please write now to Phil Goodwin at the SMP office (address inside); you will be sent full details and application forms as soon as they are available.



Left: Pupils in East Anglia receiving their first certificates in the scheme of assessment linked to the SMP 11-16 Green series. The scheme is based on graduated tests and covers a wide range of skills (see inside). Photo courtesy Cambridge Evening News.



## Looking forward to GCSE

Members of the SMP 11-16 team among those giving a hearty welcome to the government's GCSE go-ahead earlier this year. Team members have been working since 1982 in partnership with representatives of all the new examining groups to implement a joint GCSE/CSE examination for the schools using the draft version of the SMP 11-16 material. One aim of the work has been to build up experience of how a 'combined 16-plus' examination can operate: so the Secretary of State's decision means that valuable development work will not have been wasted.

to pupils' ability so that they meet work they are ready for, but which offers enough of a challenge. It is also a practical course assessing the ability to cope with mathematics as it occurs in real life and offering opportunities for pupils to pursue their own lines of mathematical thought. Both of these

lished version of SMP 11-16 or are thinking of doing so, frequently ask what examinations, related to the course, will be available for their pupils. Summer 1988, when the first of these pupils are in the fifth form, is of course the date when the new GCSE examinations will first be sat. Since the

pursuing the feasibility of a school-based component. Schools adopting the published SMP 11-16 course can be sure that they are using material which in its draft form is well abreast of current examination thinking and which is being revised with the detailed GCSE arrangements kept in view.

'Schools adopting the published SMP 11-16 course can be sure that they are using material which in its draft form is well abreast of current examination thinking and which is being revised with the detailed GCSE arrangements kept in view.'

Entry to the trial examination is strictly limited to the pilot schools and the scheme will operate in the years 1985 to 1987, administered jointly by the Oxford and Cambridge Board and the East Anglian Examination Board. Pupils will receive normal O level and CSE certificates.

SMP 11-16 is a 'differentiated' course: it provides different material according

aspects are reflected in the pilot scheme of assessment. The joint GCSE/CSE scheme has four written papers arranged in increasing difficulty (from which a pupil takes an adjacent pair matched to his or her capabilities) and a school-based component worth 30% of the marks and consisting of course-work tasks and tests of mental mathematics. Fuller details of the pilot scheme are given inside this issue.

detailed arrangements for GCSE are still being worked out. It is too early yet for anyone to say what will be available. What is certain is that the new system will by 1986 start to have a major impact on all schools, whatever course material they are presently using. The most recent proposals for '16-plus criteria' in mathematics laid stress on the need for differentiated examination schemes and the Secretaries of State in their reply to these proposals showed a marked interest in

Schools which have adopted the pub-



## Green series assessment: step by step achievement

The SMP 11-16 'Green series' is designed for pupils in the third year onwards in the band of ability not at present catered for by the public examination system. The last issue of SMP News outlined the special scheme of assessment which is being provided for these pupils in the schools using the draft version of the course.

Designed to provide the pupils with worthwhile short-term targets and to assess a wider range of abilities than can be examined by written tests alone, this Green series assessment embodies many of the Cockcroft report's recommendations in this area. The certificates awarded in the scheme are intended to give parents and employers a clear and detailed statement of the skills and knowledge which the pupil can use confidently in everyday life and employment. Much interest has been shown in this scheme; this second article tells more about how it operates at present and describes some changes taking place as it evolves.

There are five components to the assessment, which takes place throughout pupils' fourth and fifth years.

Recaps (a series of graduated, written tests)

Mental tests (graduated tests, administered orally)

Tests of simple practical skills

Oral tests towards the end of the pupil's fifth year

Topic work of the pupil's own choice

The performance of a pupil in all five of these components is recorded on his or her

'final certificate', awarded by the Oxford and Cambridge Board immediately after the pupil has left school. On the way to the final certificate there are three 'Stages'. At any time during the 4th or 5th year a pupil may gain a record of achievement at Stage one, two or three if he or she achieves high marks on the relevant written and mental tests. These 'Stage certificates' can be presented immediately by the school to pupils who have passed the requirements.

### The Stage certificates

These are based on Recaps and mental tests. There are 12 Recaps, each of which covers a part of the work in the Green series. Each Recap consists of written questions, set in a realistic context. There is no time limit on a Recap, but most pupils take about 20 to 30 minutes to complete one. In order to provide an informative profile on a pupil's mathematical ability, each question on a Recap is designated to belong to one of four mathematical areas. Each area includes skills such as these.

**Using arithmetic**  
Adding up bills, finding percentages, finding halves, quarters of sums of money, calculating averages etc.

**Interpreting data**  
Using two-way tables, reading timetables, selecting and interpreting information from graphs, piecharts etc.

**Applying spatial skills**  
Calculating areas of rectangles, measuring angles, drawing enlargements, finding areas of irregular shapes etc.

**Interpreting three dimensions**  
Following directions on a map, identifying views of an object, recognising plans and elevations, interpreting photographs etc.

To inform parents, prospective employers and others exactly what a pupil has mastered in each stage, a detailed breakdown of skills included in each mathematical area is given on the reverse of each certificate.

One of the requirements for the award of a Stage certificate is that the pupil gets at least 70% of the available marks in each of the mathematical areas at that Stage. If a pupil does not get the required percentage then, after a suitable period of revision and reinforcement, he or she may retake a Recap in a form which is similar, but not identical, to the Recap originally taken.

The second requirement for the award of a Stage certificate is that the pupil gets at least 70% on the mental tests forming part of the Stage. In most (but not all) of the Recaps the pupils use a calculator. In the mental tests pupils are expected to work out each problem in their head. For each of the three Stages, there are two mental tests. Each test includes questions of a straightforward type, for example:

What is 67 and 24?  
Write down half of 78.  
What is 5% of £37,  
etc.

as well as questions which are set in a context:

How many 3p stamps can you buy for £1?  
Rice comes in 500g packets. How many do I need if I want 3kg of rice?  
I left school to go home at 10 to 5. It took me 45 minutes to get home. What time did I arrive? etc.

The pupils are expected to answer each question quickly (about 5 to 10 seconds is

allowed) and without using pencil and paper methods. In order to pass a Stage, they must get 70% or more of the available marks, as well as passing on the four mathematical areas covered by the Recaps.

### The final certificate

The remaining three components of the assessment - practical and oral tests, and topic work - are not included in the Stage certificates. A pupil's performance on these three components (together with that on the Recaps and mental tests) is recorded on the final certificate.

The Green series itself requires pupils to use very many different types of practical mathematical skills. The practical tests focus on just five of these skills. The pupil passes each practical skill only if he or she can carry out the required tasks completely correctly.

For each skill the pupil must perform a number of straightforward tasks accurately and record the results correctly. Pupils are also required to show that they can use the skill appropriately in a realistic everyday context.

#### Measuring lengths

Pupils are required to measure accurately the lengths of a number of different objects. The lengths vary from less than 30cm to over 1.5m. Pupils are also required to take measurements in some way (e.g. to measure a work surface, and then use a two-way table to calculate the cost of covering it with Formica).

#### Measuring weights

Pupils have to weigh accurately objects between 200g and 2kg, and record the weights. Using a weight in a context might include weighing a small parcel and then using a Post Office postage chart to work out how much it will cost to post it 2nd class.

#### Using two-way tables

Pupils must be able to read a two-way table and a timetable directly and to use a two-way table after taking measurements (see examples above).

**Interpreting three dimensions**  
Pupils have to assemble a number of components into a completed object by following an exploded diagram, and must be able to follow instructions given in diagrammatic form.

#### Using money

The pupil is expected to count up accurately the value of coins given to him or her and to be able to give exact change.

On the pupil's final certificate, each practical skill that the pupil has passed is recorded.

The Green series stresses the importance of being able to communicate to other people. In order to assess the pupil's ability to communicate, the Green series assessment includes an oral test. The test opens a range of difficulty. It includes at a simple level being able to read a newspaper headline, like 'Smiths make record profit of £3.5m'. But the oral test is not just about giving a verbal answer: it is also about communicating mathematically - for example, at a more difficult level, explaining how you can tell that a simple calculation is wrong, explaining why 5 bags of potato at 99p each cannot come to £2.95. Arising directly from work in the Green series, pupils are asked in the oral test to show that they can give instructions to someone from a street map. The result of the oral test is recorded on the final certificate.

Among the materials which the SMP is providing for the pupils are a number of optional 'Topic booklets'. These provide an opportunity for pupils to select a particular topic of interest, to apply their mathematical skills to it, and to find out more about the topic for themselves. Any topic booklet on which the pupil has done sustained work (to a maximum of four titles) will be recorded on the final certificate.

### An evolving scheme

The Green series assessment is being used in some 40 pilot schools around the country. Pupils leaving these schools in the years 1985 to 1987 are able to take part in the scheme of assessment. The Department of Education and Science has

clear its interest in the pilot assessment by sponsoring a research study based upon it. This 'SSCC' study is to assess the feasibility of the assessment and its success in implementing proposals in the Cockcroft report. Pupils who leave school in 1988 will be able to follow the published version of the Green series, and we have every expectation that they will be able to follow a scheme of assessment similar to that being followed by pupils in the pilot schools. The study will enable the assessment to be carefully scrutinised and further development work to be carried out.

Among other developments of the Green series assessment which the SSCC is investigating, is the provision of a foundation stage in mathematics, to underpin the three Stage certificates presently being awarded to pupils following the series. The assessment of this foundation stage might take a rather different form from the three current stages. The SSCC is also looking at ways in which the stages could incorporate the practical and oral assessment without becoming too unwieldy. Information sheets about the SSCC study are available from the SMP office.

Below: Two of the sheets stating the tasks to be carried out in the practical tests. Beneath them: the reverse of the Stage one certificate providing parents, employers and the pupils themselves with a detailed record of the skills tested.

#### Practical sheet 11

##### Planning a kitchen

Here are some pictures of kitchen furniture. You have to plan a kitchen. Look at the large Kitchen Planner sheet. The plan of a cooker is already drawn on it. You have to glue some plans of other things onto the Kitchen Planner. Now look at Practical sheet 10. On it are drawn the plans of a corner unit, a sink unit and a fridge. Draw the plan of a larger and a long base unit on sheet 10. Label the front of the larger and the long base. Now cut out the plans of the 5 things on sheet 10. Arrange the things on the Kitchen Planner where you think they fit best. Then glue the things onto the planner. You can draw the plans of other units on squared paper and glue them in the kitchen if you want. When you have finished, show your kitchen plan to your teacher.

#### Practical sheet 9

##### Covering a table with Formica

Formica is a plastic that comes in thin sheets. You use it for covering tables or desks like in the picture on the right. You need to choose a sheet of Formica that is just a bit bigger than the desk. Your teacher will show you a desk or a surface that is to be covered. Measure the desk. Look at the table below. It shows the sizes of Formica you can buy and how much each size costs. Work out how much it will cost to cover the desk with Formica.

| length | width   |         |         |         |         |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|        | 30cm    | 40cm    | 50cm    | 60cm    | 70cm    | 80cm    | 90cm    | 100cm   | 110cm   | 120cm   |
| 30cm   | £ 1.89  | £ 2.52  | £ 3.15  | £ 3.78  | £ 4.41  | £ 5.04  | £ 5.67  | £ 6.30  | £ 6.93  | £ 7.56  |
| 40cm   | £ 2.52  | £ 3.36  | £ 4.20  | £ 5.04  | £ 5.88  | £ 6.72  | £ 7.56  | £ 8.40  | £ 9.24  | £ 10.08 |
| 50cm   | £ 3.15  | £ 4.20  | £ 5.25  | £ 6.30  | £ 7.35  | £ 8.40  | £ 9.45  | £ 10.50 | £ 11.55 | £ 12.60 |
| 60cm   | £ 3.78  | £ 5.04  | £ 6.30  | £ 7.56  | £ 8.82  | £ 10.08 | £ 11.34 | £ 12.60 | £ 13.86 | £ 15.12 |
| 70cm   | £ 4.41  | £ 5.88  | £ 7.35  | £ 8.82  | £ 10.29 | £ 11.76 | £ 13.23 | £ 14.70 | £ 16.17 | £ 17.64 |
| 80cm   | £ 5.04  | £ 6.72  | £ 8.40  | £ 10.08 | £ 11.76 | £ 13.44 | £ 15.12 | £ 16.80 | £ 18.48 | £ 20.16 |
| 90cm   | £ 5.67  | £ 7.56  | £ 9.45  | £ 11.34 | £ 13.23 | £ 15.12 | £ 17.01 | £ 18.90 | £ 20.79 | £ 22.68 |
| 100cm  | £ 6.30  | £ 8.40  | £ 10.50 | £ 12.60 | £ 14.70 | £ 16.80 | £ 18.90 | £ 21.00 | £ 23.10 | £ 25.20 |
| 110cm  | £ 6.93  | £ 9.24  | £ 11.55 | £ 13.86 | £ 16.17 | £ 18.48 | £ 20.79 | £ 23.10 | £ 25.41 | £ 27.72 |
| 120cm  | £ 7.56  | £ 10.08 | £ 12.60 | £ 15.12 | £ 17.64 | £ 20.16 | £ 22.68 | £ 25.20 | £ 27.72 | £ 30.24 |
| 130cm  | £ 8.19  | £ 10.92 | £ 13.65 | £ 16.38 | £ 19.11 | £ 21.84 | £ 24.57 | £ 27.30 | £ 30.03 | £ 32.76 |
| 140cm  | £ 8.82  | £ 11.76 | £ 14.70 | £ 17.64 | £ 20.58 | £ 23.52 | £ 26.46 | £ 29.40 | £ 32.34 | £ 35.28 |
| 150cm  | £ 9.45  | £ 12.60 | £ 15.75 | £ 18.90 | £ 22.05 | £ 25.20 | £ 28.35 | £ 31.50 | £ 34.65 | £ 37.80 |
| 160cm  | £ 10.08 | £ 13.44 | £ 16.80 | £ 20.16 | £ 23.52 | £ 26.88 | £ 30.24 | £ 33.60 | £ 36.96 | £ 40.32 |
| 170cm  | £ 10.71 | £ 14.28 | £ 17.85 | £ 21.42 | £ 24.99 | £ 28.56 | £ 32.13 | £ 35.70 | £ 39.27 | £ 42.84 |
| 180cm  | £ 11.34 | £ 15.12 | £ 18.90 | £ 22.68 | £ 26.46 | £ 30.24 | £ 34.02 | £ 37.80 | £ 41.58 | £ 45.36 |
| 190cm  | £ 11.97 | £ 15.96 | £ 19.95 | £ 23.94 | £ 27.93 | £ 31.92 | £ 35.91 | £ 39.90 | £ 43.89 | £ 47.88 |
| 200cm  | £ 12.60 | £ 16.80 | £ 21.00 | £ 25.20 | £ 29.40 | £ 33.60 | £ 37.80 | £ 41.99 | £ 46.18 | £ 50.37 |
| 210cm  | £ 13.23 | £ 17.64 | £ 22.05 | £ 26.46 | £ 30.96 | £ 35.46 | £ 39.96 | £ 44.46 | £ 48.96 | £ 53.46 |
| 220cm  | £ 13.86 | £ 18.48 | £ 23.10 | £ 27.72 | £ 32.34 | £ 36.96 | £ 41.58 | £ 46.18 | £ 50.79 | £ 55.39 |
| 230cm  | £ 14.49 | £ 19.32 | £ 24.15 | £ 28.98 | £ 33.66 | £ 38.46 | £ 43.26 | £ 47.97 | £ 52.67 | £ 57.37 |
| 240cm  | £ 15.12 | £ 20.16 | £ 25.20 | £ 30.24 | £ 34.98 | £ 39.96 | £ 44.94 | £ 49.92 | £ 54.89 | £ 59.87 |
| 250cm  | £ 15.75 | £ 21.00 | £ 26.25 | £ 31.50 | £ 36.30 | £ 41.40 | £ 46.50 | £ 51.60 | £ 56.70 | £ 61.80 |

This certificate is issued in recognition that in the tests administered a score of 70% or more has been achieved in each of the following areas covering the competencies listed. Questions in Mental Mathematics are given orally and answered without the aid of a calculator. All other tests comprise written questions in context.

**Using Arithmetic**  
Count, add, subtract, multiply, divide whole numbers under 500, and identify remainders where necessary. Calculate costs and change up to £100. Find half or quarter of a sum of money in simple cases. Increase or decrease an amount by one of these percentages. Double, treble or halve an amount. Change simple fractions of kg to g, and of m to cm, and vice versa. Add and subtract 2-place decimals in the context of money or length. Calculate time intervals under an hour, or in whole hours. Perform simple ratio calculations as in real life amounts. Add thousands to numbers of the form 43,142 and place each number on a number line.

**Interpreting Data**  
Read, select and interpret information from pictures, diagrams, written text, lists, line charts, stick graphs and scales marked in units or tens. Perform related calculations on data so obtained. Complete a 2-way table from information given. List the permutations of 4 items. Estimate the size of sectors of a percentage pie-chart.

**Applying Spatial Skills**  
Calculate the areas of rectangles and composites whose sides are small whole numbers of m or cm. Visually compare angles under 180° with a right angle. Draw reflections of shapes and letters. Draw enlargements on a square grid. Identify shapes and letters having line symmetry. Create a symmetrical pattern, both by following ordered instructions and with no guidance. Name a 2-D regular polygon of at most 8 sides, identify the number of angles at its centre and calculate their size.

**Interpreting Three Dimensions**  
Follow at most 2 directions of an 8-point compass on a diagrammatic map. Observe detail to match similar figures. Identify different views of the same object. Identify rotations and reflections of the same 2-D arrangement of objects or shapes. Identify and count the number of cubes in a block or part block. Given a part block state the number of cubes in the full block.

**Mental Mathematics and Estimation**  
Translate a number under 1000 or an amount of money under £10, stated in words, into figures. Add and subtract 2-digit numbers. Add amounts of money of the form 90p + 40p. Multiply a digit by a digit, 10 or 100. Double numbers under 20. Increase a small negative integer by a small integer. Calculate the change from £1. State the number halfway between two consecutive integers. Estimate the position of an integer on a line marked 0 and 100. Estimate the length of a line given a standard length. Convert whole numbers of kg to g, and of m to cm. Subtract multiples of 10 cm from 1 m. Add 1-place decimals under 10. Estimate an acute angle under 10°. Halve, third and quarter small multiples of 2, 3 and 4 respectively. Divide multiples of 10 by 10. Translate spoken times (in quarter-hours) into figures using 12h and 24h clock. Calculate intervals of time under 1 hr, given in multiples of 5 min. Calculate a finishing time, in multiples of 5 min, given start time and interval less than 20 min. Calculate 20%, 25%, 50% of sums of money of the types £2, £12, £46 respectively.

## Assessment at 16-plus for SMP 11-16 testing schools

The SMP 11-16 material for years 3, 4 and 5 consists of three series of books, Yellow (for the most able), Blue, and Green. During the fourth year the Blue series splits giving an additional route called the BE (Blue 'extension') series (to be called the Red series in the published version). The joint scheme of assessment is intended for pupils using the Yellow, BE and Blue series in the testing schools. The written part of the assessment consists of four papers of increasing difficulty: a candidate takes an adjacent pair of these papers.

The diagram on the right shows how each of the three series of books leads to two of the written papers. The 'target grades' indicate the standard each pair of papers is designed to assess, though higher and lower grades will be available for award.

Those developing the assessment are trying to ensure that it will amount to a worthwhile experience for the pupils: setting mathematics in real-life contexts, fostering a secure grasp of a realistically sized syllabus - these aims of the SMP 11-16 course materials are being carried through into the assessment. Having four papers on a sliding scale of difficulty allows a pupil to be entered so that the easier of the two papers taken feels 'comfortable' and allows clear achievement, but the harder of the two provides something of a challenge. A calculator is used for all four papers.

The remaining marks are allocated to the school-based component which consists of orally given tests in which a calculator is not allowed, and a series of coursework tasks, set externally and carried out during the fourth and fifth years. The reasons for including a coursework component are the same as for the Cockcroft committee to recommend the inclusion of certain types of work, notably investigative work and work requiring the candidate to collect and select

| Materials in years 3, 4 and 5 | Papers | Length   | Target grades        |
|-------------------------------|--------|----------|----------------------|
| Yellow series                 | 4      | 2½ hours | GCE A, B, C<br>CSE 1 |
| BE series                     | 3      | 2½ hours | CSE 2, 3             |
| Blue series                   | 2      | 2 hours  | CSE 4, 5             |
|                               | 1      | 1½ hours |                      |

appropriate data from the real world, cannot adequately be assessed by written papers. The tasks are divided into the categories of drawing, pattern, statistical surveys, sampling and investigations and are specified either to be done in school under supervision, or to be done at home. The tasks are marked by teachers and are moderated externally.

As so many aspects of the assessment are new, its operation is being monitored carefully to safeguard candidates' interests and to gather information of potential use to all examining groups in preparing for the GCSE. The Secondary Examinations Council is giving generous support to this monitoring and dissemination work. Per schools interested in following these developments more closely, a booklet containing the syllabus, scheme and specimen papers is available free of charge from the SMP office. As a pilot exercise the trial schools are being provided with mock papers to be used this winter. Copies of these will be available for information from the SMP office and the administering boards after 29 February 1985, price £3.75 for the set of four papers.

### Addresses

**Cambridge University Press**  
The Edinburgh Building  
Shaftesbury Road  
Cambridge CB2 2RU

**SMP Office**  
Westfield College  
Kidderpore Avenue  
London NW3 7ST  
Phone 01-435 7141

**Oxford and Cambridge Schools Examination Board**  
100, The Strand  
London WC2R 0BH



## New Chairman for SMP Trustees

Professor Geoffrey Howson was appointed Chairman of the SMP Trustees earlier this year in succession to Professor Bryan Thwaites who becomes President of the SMP. Professor Howson has held academic posts at Southampton University since 1962 when he became the first full-time employee of the SMP. He contributed to the early SMP texts as an author and an editor, and has been a Trustee of the Project since 1967. He has a keen interest in mathematics education both in the UK and abroad and has written widely on curriculum development in mathematics.

## Examination noticeboard

### SMP O level

From the June 1985 examination onwards there will be only one SMP O Level examination (replacing the 'N' and 'C' examinations), in which a calculator will be required for Paper 2. Details are available from the Oxford and Cambridge Board.

### The Midlands Examining Group SMP examination

This is an O level plus CSE scheme, using four 'in-line' papers. Until now all schools could enter for the O level papers, but CSE certificates could only be awarded to pupils in schools within the region of the West Midlands CSE Board. However, it is confidently expected that all grades will be available to schools in all parts of the country from 1985. Details of the scheme are available from the SMP office.

### SMP CEE

Administered by a consortium of CEE boards, this examination is available to all schools. The examination will take place in 1985 and 1986. It is expected that the examination will continue after 1986 so long as a sizeable demand for it exists.

### SMP Additional Mathematics

The 1984 papers were the first to be set on the revised arrangements. The *Revised Additional Mathematics* textbook will be published by Cambridge University Press early in 1985.

### The SMP A level

In 1985 this will be based on the modified syllabus which includes all of the agreed inter-board core. Consequently the Further Mathematics syllabus will in 1985 additionally include topics deleted from the A level syllabus.

There will be additional modifications to the Further Mathematics syllabus as part of new arrangements operating from the 1986 examination. These include a change in Paper 1: although the questions will be similar in difficulty and length to those set at present, the candidate will be required to answer 12 of them instead of the present 15. Details of these changes have been circulated by the Oxford and Cambridge Board to all schools that have entered candidates.

## Going further in Further Mathematics

John Hersee writes on plans for an alternative component in the assessment.

The limitations of an examination which uses only timed written papers are well known. The Cockcroft report discusses these matters and, although the comments there are made chiefly in the context of examinations at 16-plus, they apply equally at all levels. We expect a pupil who has studied 'double mathematics' to know the content of a large syllabus, but what other qualities do we expect and wish to encourage?

We do not expect to 'spoon-feed' a double subject pupil (nor should teachers in tertiary education expect to do so). We want him to learn how to learn - to read and study mathematics from books and journals. We would expect him to be able to find references using libraries and other resources. Faced with an unfamiliar situation we hope he would be able to apply his mathematical knowledge, to investigate, model, conjecture, prove, or to pursue a topic which leads him into new mathematical fields. And we would expect him to persist, and pursue his researches towards a conclusion.

To encourage and assess these aspects of mathematical work it is proposed to offer an alternative, optional in the first instance, to replace part of the standard two 3-hour written papers. As with all SMP development, we proceed by careful trial in a number of pilot schools. Only when the results of some years' experience have been considered shall we be able to decide whether the scheme meets its aims.

The outline of the scheme is as follows. Pupils in the pilot schools will take two 2-hour papers containing questions from the standard 3-hour papers. In the first paper there will be 5 questions on each section of the syllabus; answers to 8 questions will be required. In the second paper candidates will be asked to answer 4 questions chosen from 15 questions (3 on each section) in the paper. There will be a third paper which is a comprehension test.

Candidates will be allowed 45 minutes preliminary reading time to study two pieces of text (e.g. articles from mathematical journals), during which time they will be allowed to make notes. Then two sets of questions, one for each passage, will be supplied; the candidate can choose whichever passage he wishes and answer the questions set upon it. The time allowed for this will be 75 minutes; the candidate will retain the text for reference during this time.

The first two papers will each account for

one-third of the available marks; paper 3 for one-sixth. The remaining one-sixth of the marks will be available for a project, carried out by the student over a period of about three weeks, on which he will submit a written report which will be assessed by his teacher, with arrangements for external moderation.

If you have any comments on this proposal or would like to enter candidates for this experimental component please write to me at the SMP office.

## brief news

### Recent publications

Two new SMP publications are now available, published by the Cambridge University Press. *Pointers* is a handbook for teachers of young children, which gives advice and suggestions on activities with mathematical potential.

The pocket booklet *Formulae for advanced mathematics with statistical tables* is designed as a companion to the scientific calculator. It contains a wealth of formulae and important statistical tables and will be of value to university students as well as to those studying for A level. Of course, it may be used in the SMP A level examination.

### More ITeMS

The third issue of *ITeMS* (Ideas in the Teaching of Mathematics and Science) contains full ordering details for a wide variety of teaching materials, sources of teaching ideas and articles on mathematics and science education. *ITeMS* is available from FR Watson, Department of Education, University of Keele, Staffordshire ST5 5BG; please send a stamped self-addressed A6 envelope plus one extra 13p stamp.

### SMP In-Service Resource Kits

There are now ten titles in the list of SMP In-Service Resource Kits. New titles now available are *Communicating with parents* and *Numeracy*. *Understanding the decimal system* will be available shortly. The price of each kit is about £8. Kits are available only from the SMP office. A leaflet outlining each kit and including an order form is available from the SMP office.

### The National Mathematics Competition (NMC)

This will take place on Tuesday, 26 February 1985. Pupils who gain high enough scores in this competition qualify for entry to the British Mathematical Olympiad. These two competitions are the first stages in the selection of the British team to the International Mathematical Olympiad which will be held in Finland in 1985, but the standard of the NMC is not high; any good sixth-former (and many younger pupils) can do well in it. Details of how to enter for the NMC and copies of past papers are available from the Mathematical Association, 259 London Road, Leicester, LE2 3BE.

your school you may keep the Inspection copy free of charge. These are the titles with their ISBNs and approximate prices where available:

|                         |             |
|-------------------------|-------------|
| SMP 11-16 Book Y1       | About £3.75 |
| 31764 1                 |             |
| SMP 11-16 Book B1       | About £3.00 |
| 31763 3                 |             |
| SMP 11-16 Book G1       | About £2.00 |
| 31762 5                 |             |
| SMP 11-16 Book G2       | About £2.00 |
| 31765 1                 |             |
| Special pack containing | About £1.50 |
| Investigating folding   |             |
| Pattern                 |             |
| 30308 7                 |             |

## Coming soon: SMP 11-16 book-based material for year 3

Previous issues of *SMP News* have described how the course in year 3 comprises three parallel book-based series. The Yellow (Y) series assumes coverage of levels 1 to 4 of the main booklet scheme, of the extension material in levels 2 and 3, and of specified level 4 extension booklets. The Blue (B) series assumes coverage of levels 1 to 3. The Green (G) series for pupils who have covered most of levels 1 and 2 but little, if any, of level 3.

The first items for year 3 will be published in January 1985 - Book G1 and three booklets for the Green series entitled *Impossible objects*, *Investigating folding* and *Pattern*. Next to appear will be Book G2. Book B1 will be published in March 1985, and Book Y1 in April 1985.

### Inspection copies

If you would like to receive inspection copies of these books, write now to Paul Uttley at Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, and a copy of each title will be sent to you as soon as it is available. If you decide to adopt the title in

For 13 year old pupils who have not followed the earlier part of the SMP 11-16 course, two transition books Y1 and B1 are being produced for use alongside Book Y1 and Book B1 respectively. The transition books contain material from the later levels of the booklet scheme. The publication timetable for these and other titles due in 1985 is as follows.

|                 |             |
|-----------------|-------------|
| Book Y1         | Spring 1985 |
| Book B1         | Spring 1985 |
| Green series    | Summer 1985 |
| resource pack A |             |
| Book G3         | Summer 1985 |
| Book Y2         | Autumn 1985 |
| Book B2         | Autumn 1985 |

Teacher's guides and worksheets will be available for the autumn term.

### SMP 11-16 user group

A group of Devon teachers using SMP 11-16 now plan to meet regularly to discuss their experiences in operating the scheme and to exchange ideas about organisation, teaching approaches and so on. The group, which welcomes new members, has its next two meetings fixed for 7 February and

20 June 1985. Further details can be obtained from Alan Mace, Coombe Dean School, Charnhill Way, Elburton, Plymouth, Devon, PL9 8ES, telephone Plymouth (0752) 46961.

The SMP 11-16 team is aware of several local groups of this kind being set up across the country and the SMP office often receives enquiries from teachers who would like to join such a group. However, the office does not have a complete record of groups. If you are running a group or know of one please write to Fanchette McReynolds at the SMP office with the location of the group, the name and address of the secretary and a telephone number (state whether it is home or school number). If you have any meeting dates fixed for the late spring and summer 1985 include those too: it may be possible to list dates in the spring 1985 *SMP News*.

### Worksheet correction

One of the worksheets in the level 3 pack of masters (worksheet 3-7) contains an error: the roof on the net of a shed is incorrectly drawn. A corrected worksheet is being printed and will be sent in December to all the user-schools of which we have a record. Copies will then also be available from the SMP office and Cambridge University Press educational representatives.

### Red and black dice

Red and black 0 to 5 dice are called for in level 2 of the SMP 11-16 booklet scheme. Although schools can improvise their own in various ways we have had a number of enquiries seeking a source of ready-made dice of this type. A pack of 25 black dice and 25 red dice costing £2.80 + VAT can be obtained from Tarquin Publications, Stradbroke, Diss, Norfolk IP21 5JP. One pack would be ample provision for an SMP 11-16 school with, say, a comprehensive intake of 120 pupils.

Making an evaluation of a new piece of software is difficult. Important factors may not be obvious: flexibility, robustness, quality of screen layout, ease of use or what the children actually do. Unlike a book or work-card it may not be apparent whether the program is a complex resource of wide ranging application, or a limited but very useful package.

As with conventional resources, software designers use space, colour and pictures on a page to get their message across. However, they can also manipulate the timing, sequencing and interaction of the reader with the messages, and this introduces extra dimensions in the teacher's evaluation. It is the very nature of software that browsing through is difficult.

To help teachers there are several published evaluation procedures and criteria, the Microelectronics in Education Programme document by David Ellingham and Ray Haydn is one example. Such documents give valuable checklists of things to look for and bear in mind. However, busy teachers may not always have the time to engage in such formal procedures and so may concentrate on the more immediate aspects of graphic, sound, layout and so on, missing the implications of choosing a particular program package. The program and its workings may be understood. What you have to do to use it well may be missed.

My aim in this article is to suggest a way of looking at software which could either be part of a broader scheme or stand alone as a way of getting the feel of a piece of software and its classroom implications. It relies on an idea which I call 'focus'. I'll explain it by way of an analogy.

Suppose a friend takes you bird-watching. You are sitting in a hide hoping to see something interesting. To help you, you have your binoculars, your friend's telescope fastened in a fixed position in the hide.

The telescope fixed to the hide allows you to look only at one thing - Ospreys in their nest half a mile away. For you to use this instrument well,



## Versatile focus

Tony Gray suggests a means of evaluating software

your friend need make only limited preparations because he knows exactly what you'll be looking at. You can use this instrument on your own quite successfully, your friend checking from time to time that all is well. This telescope is inflexible but it gives an excellent view of the nest. It does one job very well. It has 'fixed focus'.

The telescope brought by your friend is on a tripod which swings, allowing you to pan across the scene. It is pre-set to a particular distance and you can see not only the Ospreys, but also a Peregrine Falcon which has conveniently perched on a branch nearby.

The instrument allows you some choice. You can, for example, look left or right from the nest. However, you are best to stick closely to the pre-determined focal area. Because you have some choice, it will be necessary for you to have some idea of what you might see. Your friend has therefore prepared a small sheet with pictures of those birds most likely to appear. He doesn't know exactly where you'll look or what will drift into your field of vision, but he has a fair idea. He has also given you a limited amount of instruction in the technique of using the telescope. As you watch, his role is to help you acquire the particular

knowledge and skills of this activity. With his help, you have a more flexible field of view, but it is 'pre-focused'.

Your binoculars are completely flexible. You can look at anything you choose (regardless of distance or direction) and so catch sight of the beautiful 'brandishing' display of the male Osprey as he plunges and swoops high above you. In order to benefit fully from this experience, your friend will have taken you on other trips. You will have studied common birds, know how to use a field guide and have a good technique with the binoculars.

Your friend may well have brought

other reference books for you both to use in case something rare turns up. Neither you nor your friend knows exactly what will happen. He acts as an experienced guide sharing the experience, not an instructor. Using your binoculars requires skill but allows you to look at anything you wish, more or less. They have 'variable focus'.

The instruments allowing you to look at the scene are fixed focus, pre-focused and of variable focus. These three ways of looking can be used to consider software.

Software of fixed focus has a precisely determined outcome. It is the good drill and practice program. The program which, like *Rally* (1) for example, aims to improve pupils' speed and accuracy of computation in the four rules of number and does that job, efficiently and precisely. Programs of this kind make no pretension to breadth or flexibility.

Like the hide-telescope in the analogy, they enable you to do a particular job very well. This is useful because the teacher can see precisely where the program will fit into an existing curriculum and what preliminary work must be mastered before the program can be used by a class.

Another feature of this type of software is that the program often determines the mode of teaching and learning. For example, it may work best when two children work slowly together through the given task, the teacher making the occasional visit to check their progress and direct the activity. It is unlikely that anything unexpected will occur. The children are working within well-defined limits, and the teacher will not normally have any special preparatory work. As long as the teacher has looked through the program previously, she knows exactly what the children are doing and can evaluate their progress fairly precisely.

These programs are comparatively easy to demonstrate and evaluate because of their sharply-defined goals. They often have a strong appeal to teachers because they can be easily classified and identified with well-known areas of the curriculum. The

continued on next page

## If you have a micro Longman has the software you need...

### Science

**Biology Pack 3** from Warwick Science Simulations is now here, including Biological Control, Trawlers, Mesh and Predator Prey.

**Moths, Mice and Other Beasts** is a genetics pack of 5 programs specifically for CSE and O level.

**Microdiet** a database of over 500 foods detailing 29 nutrients for each. Now available for BBC as well as RML.

**Collisions** what actually happens when two objects collide?

**Formulae Game, Chemical Element Game, Compound Identification** programs to help reinforce Chemistry skills.

### Humanities

**Factory Location** investigate using the Monte Carlo approach and Markov Chain technique.

**Data Development Search** take a statistical and graphical look at development on a worldwide scale.

**Macroeconomic Database** a database of real, up-to-date economic data for 25 developing, developed and underdeveloped countries.

**Aural 5** aural practice for students taking music exams (Grade 5).

**Ecce Romani** a first in Latin software to supplement the Oliver & Boyd course.

### Mathematics

**Micros in the Maths Classroom** 14 programs about to be published for BBC and RML. Has to be a best buy.

### Primary

**MicroMap** a catalyst for all kinds of work - maths, language work, creative writing, environmental studies, debating... as well as map work of course.

**Other Worlds, Terrible Tales, Basic Number Help** all now on BBC disk.

**Micros in the Primary Classroom** now available - all five modules in this major teaching resource/school-based in-service training course.

Most titles are available for BBC, 380Z, 480Z and Apple micros. Prices range from £9.95 to over £100 although most are under £15 (+VAT). Many of the packages come from major development groups (CIC, ITMA, AUCBE) and have been produced with MEP support.

Full details are available in our full catalogue available from Barbara Arkell, Longman House, Burnt Mill, Harlow, Essex CM20 2JE (0279) 26721.

Alternatively, visit the Longman stand at the School's Computer Fair Pembroke Halls, Worsley, Manchester on Wednesday and Thursday 14/15 November.



EXTRA

## Versatile focus

work the children do is familiar and results in outcomes which are generally agreed valuable by parents and teachers alike. It is usually quite easy to say what the children have achieved. Fixed focus software is quick to write. There is a lot of it about and for this reason it varies enormously in quality. Fortunately, the good material usually stands out from the rest once you've had a chance to see a variety of this sort of program. It is the quickest to judge and can be some of the most regularly used material you have.

Think of *Granny's Garden* (2), *Mary Rose* (3), or *Micro Map* (6) and you have an idea of pre-focused software. Here the subject-matter of the program is pre-determined but teachers and pupils have flexibility as their work extends out and away from the micro. Their experiences and activities will vary within the context of the undersea excavation, the magic garden or the village of Ferndale.

This means that the outcomes cannot be known precisely. One group may learn something different to another group. Naturally, introducing a degree of flexibility within a fixed context means that the teacher will have to be well-prepared with books and other materials to hand. Particular preparatory work may need to be planned and done by the children before they come to the program.

Using such programs can be very demanding on teacher, class, time and energy. The teacher must consider whether this investment is worthwhile in terms of the outcomes achieved.

It is important to realise the implications of choosing to use a piece of pre-focused software. Teachers will have to devise efficient ways of showing complex programs of this type to their classes. They will also have to consider the ways in which classroom organization is affected by software which allows the children a degree of freedom in their work. The fact that the program addresses a particular topic enables teachers to see where it will fit into the school's existing work. However, it may require quite complex record-keeping to know exactly what the children are learning and doing.

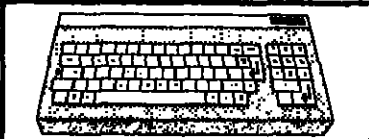
Flexible programs may be difficult to evaluate thoroughly. With software of this type newer territory is being explored and it may be quite difficult to explain (or justify) exactly what has been achieved. The work has a familiar feel but is in a new context. Very little detailed research has been done to confirm or condemn teacher's practice with this type of software, intuition being people's main tool for evaluating such programs at present.

Pre-focused software has depth and complexity. It takes time to evaluate, and may prove demanding to use and manage because of its flexibility.

Accepting these facts may be half the battle in getting good results. Anything really worthwhile takes time to know and understand.

In an analogy the binoculars represent the variable focus type of software. They are a tool which allows you to look at whatever you wish. Of course they can be used with understanding or otherwise, but practice and advice will enable you to acquire that understanding. You are in control. No-one can pre-determine whether you will use binoculars to help you in an act of murder or in watching birds. No-one can know whether you will use a wordprocessing program to write a prayer or an obscene poem. Variable focus software has this open quality.

Data handling programs, wordprocessors, software to enable children to create pictures and sounds, turtle-graphics packages – all are programs of variable focus. Using them gives the children responsibility for their actions and requires the teacher to accept that fact. This is not always easy for some teachers, parents and schools to accept, but it is necessary. We cannot complain about children's lack of ability to be self-disciplined and motivated if we never give them the opportunity to practise.



Another type of program of this type is represented by the "Other Worlds" packages, *Explorer* and *Inhabitant* (5). These are content-free frameworks for topic work, which allow children to enter into worlds of their own devising or exist in worlds as another being – say a bee in a hive or a character in a story they've just read. In schools which have used the programs a great variety of work right across the curriculum has been covered, each school, class and individual doing work quite different from the others.

These programs allow great freedom to both teacher and pupil to select what will be done, how it will be done and why it's done. The goals are determined by consensus and the teacher's input can be strongly directive or otherwise. Sometimes it will be difficult to decide whether to go with the children's enthusiasms or to put a break on a particular group.

When using this kind of program, the teacher has to exercise considerable professional skill in order to maintain and ensure that the children are fulfilling the aims of the work. The outcomes will not be satisfactory if the children are left entirely to their own devices. There need not be pre-determined behavioural-type objectives. They may be like the more open-ended "expressive objectives" of Eisner (6), but the teacher needs to know what's happening and keep effective records and a good working relationship with the children.

Such software has great strength and flexibility and does bring an entirely new type of experience within the grasp of the children. It demands a piece of the teacher, however. With software of such openness, the teacher needs to be well-prepared, well-organized and fully conscious of the role the program is playing in the curriculum. This is no more than would be expected of any resource of broad application, like a Polaroid camera or a set of felt-tipped pens for example. It is true of any topic work which runs across the usual framework of disciplines. However, once or twice recently software reviews have appeared which somewhat assume that teachers cannot or will not make the effort required to use these new materials properly. I do not believe this is true except insofar as teacher's awareness of the scope of software is still in its infancy.

Content-free programs like this will remain awkward to classify, difficult to demonstrate and hard to evaluate in a short time. Neither will it be easy to justify and explain the work to colleagues, parents and policy makers. The very flexibility of variable focus software makes it both hard and easy to integrate into the curriculum. Hard, because its application may not be immediately obvious; easy, because of its breadth. "Other Worlds" has been used to stimulate work in Maths, English, History, Geography, Art, Music, RE and Games. It is up to teachers to see the openness and be inventive in applying the software to new and existing work.

The best learning aid in a classroom is still a sensitive, well-prepared, well-organized teacher. However as hard-work becomes more powerful and teachers and designers realize its full potential, software of this kind will become commonplace and with this will come a slow re-orientation of the teacher's role. Variable focus software contains a major challenge to the profession.

I have tried to introduce three broad categories of software and suggest the implications for organization, learning and teaching each carries. Each has its strengths and weaknesses, and choosing the correct resource for the job will pay dividends.

These categories are not absolute and their usefulness lies in trying to decide where (on the whole) a piece of software fits.

Tony Gray is Director of the Primary Micro Project at Loughborough University.

**References:**  
(1) Ladybird/Longman  
(2) 4maton  
(3) Ginn  
(4) Ladybird/Longman  
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## We'll do the spelling after

Carla Broderick and John Trushell on research into the role of wordprocessing in the primary school

Every primary and secondary school in Britain should possess a micro-computer by the end of 1984; most will have the potential to run wordprocessor programs, many will have the printer and disk-drive which supplement such programs. There is a growing consciousness among teachers of the need to explore the contribution that wordprocessing can make to the curriculum.

The North East London Polytechnic is currently sponsoring research into the role of wordprocessing in the primary school. The School for Education and Humanities' involvement in studies of children's writing development and children's use of micro-computers provided the initiative for the project as it is hoped that observations of primary children wordprocessing could contribute to a greater understanding of such matters as writing development.

All children, while developing as writers, encounter obstacles: Donald Graves, who stresses the importance of children drafting and editing their work (*Writing: Teachers and Children at Work*, Heinemann, 1982), suggests the following sequence of such obstacles: spelling, presentation, the conventions of punctuation, content and the need for revision. We were interested in whether wordprocessing skills could help children to overcome some of these.

Before selecting a wordprocessor program or a particular organisational approach to wordprocessing, a small scale survey of wordprocessing practices was conducted in a variety of primary schools in the Outer London Boroughs and in the Inner London Education Authority, including several schools participating in the ILEA Primary Pilot Project.

The survey revealed that children were often selected "meritoriously" for wordprocessing: children whose early drafts had achieved a certain standard were permitted to "fair copy" on to the wordprocessor. "Fair copying", possibly a consequence of the relative scarcity of the micro-computer as a classroom resource, was observed particularly in schools where there was an emphasis upon individual composition during rigidly timetabled writing lessons. Elsewhere, there were examples of children having greater access to the wordprocessor, either

working individually across the timetable or collaboratively in groups of between two and five.

It was decided that during the project children should compose collaboratively rather than individually, be encouraged to compose text rather than "fair copy" and be afforded every opportunity to explore all aspects of the wordprocessor system.

The program selected for the project was *Wordwise* (Computer Concepts, 1982) – the advantages of which Iacocca Megarry outlines in "Script and Screens" (TES, 1/3/84) – research considered this program to be simple, direct, attractive and, thus, ideal for primary children.

The school already possessed a BBC Micro B, but without *Wordwise*, and although some pupils had had an opportunity for "hands on" experience, few pupils had any previous knowledge of wordprocessing. The wordprocessor was introduced in the least obtrusive manner possible as a medium for recording the pupils' project work; schoolwork that the classes would normally have undertaken provided the data for the research. The 48 fourth year pupils were released in groups of three, selected by their class teachers, for forty minute sessions once a week for nine weeks during the spring term.

The schedule for the project comprised an introductory session during which each pupil composed a cover for his/her project folder, a story assignment (weeks two to four), a poem assignment (weeks five to six), and an informational assignment which required the groups to compose a leaflet intended to warn younger children of the dangers of fire (weeks seven to nine).

Each of the assignments involved a series of drafts, printouts of which enabled pupils, teachers and researchers to appreciate the revisions. Additionally, researchers observed the collaborative groups and recorded their discussions concerning their compositions, providing opportunities for closer examination of the writing processes by which the written product had been achieved.

Initially, the children appeared to assimilate wordprocessing in their conventional model of composing on paper by collaborating to produce "faultless" text, painstakingly correcting perceived errors by deleting and re-typing during composition. The corrections were concerned with those obstacles which Graves identified as spelling and the conventions of punctuation.

However, keyboard competence and awareness of the mutability of wordprocessor text contributed to the children's reappraising their way of composing, correction of perceived errors was postponed until drafts neared completion.

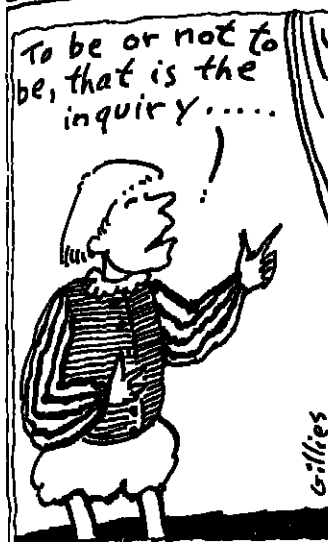
Kevin spelled aloud from the monitor, "S U P L I S E". "There's two ps in that," said Peter. "We'll do the spelling afterwards," said Patricia.

Children were seen to be preparing notes and amending printouts of previous drafts; evidence that composition and revision were not confined to their wordprocessing sessions.

While their compositions lengthened at each draft, printouts revealed a tendency to progress from an extension of the text by the addition of material toward expansion within the text by insertion. We noted that groups were mutually supportive and cooperative, and that children, rather than being intimidated, were inquisitive and innovative in their use of the wordprocessor.

Research continuing at NELP, with teacher-participation, will assess the theoretical and practical implications.

Carla Broderick and John Trushell are researchers at the School for Education and Humanities, North East London Polytechnic.



As an instrument to handle text and to allow it to be produced to a professional standard there is clearly a strong argument for any English department to possess a wordprocessor. However, neither either children learn to type fluently, or there is an opportunity to use an easier keyboard for text entry, the value of children using a wordprocessor in the normal course of lessons remains doubtful. Time in the classroom is too short to spend dwelling over a keyboard except on rare occasions, and money is at present too scarce to justify the price of upgrading a roomful of computers to a roomful of wordprocessors.

It seems likely that the majority of schools will carry on with or acquire one or two wordprocessors at most. It could still, however, become the most important piece of software that an English department possesses.

The twelve ideas that follow show some of the ways in which wordprocessing can contribute to the curriculum. In all cases they seek to stimulate discussion in the class. In some cases the finished text will be with printing or retaining, in others it will be generated purely to facilitate the discussion. Many of the ideas do not in fact require a wordprocessor, but it will make the task easier or more stimulating.

**Stylistic analysis** Type into the computer a passage taken from an author who is being studied. It does not matter whether it is prose or poetry. Using the REPLACE facility, substitute synonyms for a word or two words. Print out the new text. Repeat this process several times with different alterations so that there are a number of passages, all subtly different. The task of the group is to recreate the original text.

**Close procedure** As a suitable bank of texts builds up, it becomes easy to create passages for close procedure, either as an exercise in its own right or as a variation of stylistic analysis.

**Group stories and essays** At the end of the session there should be a perfect copy – no matter how many additions, deletions or alterations there may have been. The end product could go straight on to the wall.

**Proof reading** With minds that are not caught up in the mechanical process of re-writing it is possible to generate a



much deeper awareness of personal style along with greater attention to detail. A piece of original work by a child may well benefit from being analysed and corrected by the whole class.

**Reading for understanding and appreciation** Take a poem. Insert a few MARKERS and play around with the order of the verses. Sort it out. This exercise can be done with any number of children working together or on their own.

**Formulating aserene** The format of a text can make a considerable difference to the ease with which it is read and understood. Top often children's

## Ways with wordprocessors

by P Keane

work both in English and other subjects is poorly set out. The ease with which wordprocessing allows the shape of a text to be altered enables children to see and appreciate the same piece of work in different formats.

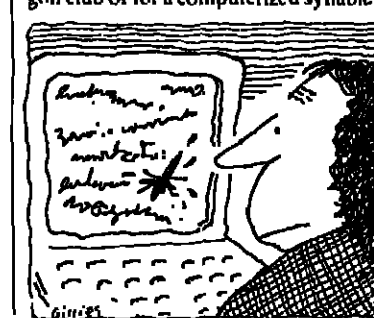
**Prefix/suffix awareness** The REPLACE facility allows the teacher to produce texts (again possibly from a ready made bank) with various prefixes and suffixes taken out. These can be used to reinforce the general meaning which lurks behind a prefix or to provide passages for correction in which a suffix such as -ed has been deleted. This activity may be a part of group work or be done by individuals working from printouts.

**Encoding** It becomes very simple to produce accurately encoded text with the CHANGE facility – even Morse Code can be generated!

**Waifle practice** Ah the joys of waifling! Type in a piece of text, say 200 words. The task is to produce a version

of the text five times longer – without having destroyed the series or having added significantly to it. Children will readily come up with ideas for expanding words, phrases, sentences. By the end of the exercise they should have a deeper appreciation of padding (and how it can be avoided).

**Rule generation** Rules abound in this life. Exceptions are nearly as common. To tidy up thinking, generate a set of rules of almost any kind, be they for a golf club or for a computerized syllable



count. As exceptions are encountered it becomes a simple matter to categorize them and to slot them into the appropriate sentence or paragraph. The exercise requires a broad range of skills from dreaming up exceptions to classifying the underlying rules. By the end, however, there should be one clear comprehensive document.

**Running commentary** Reader predictions, reactions and ideas about developing themes can be stored at the end of each session. By the time the book is finished a comprehensive set of notes generated by the class can be produced. This can then provide a focus for discussion of the book. These notes can be compared between different classes or from year to year.

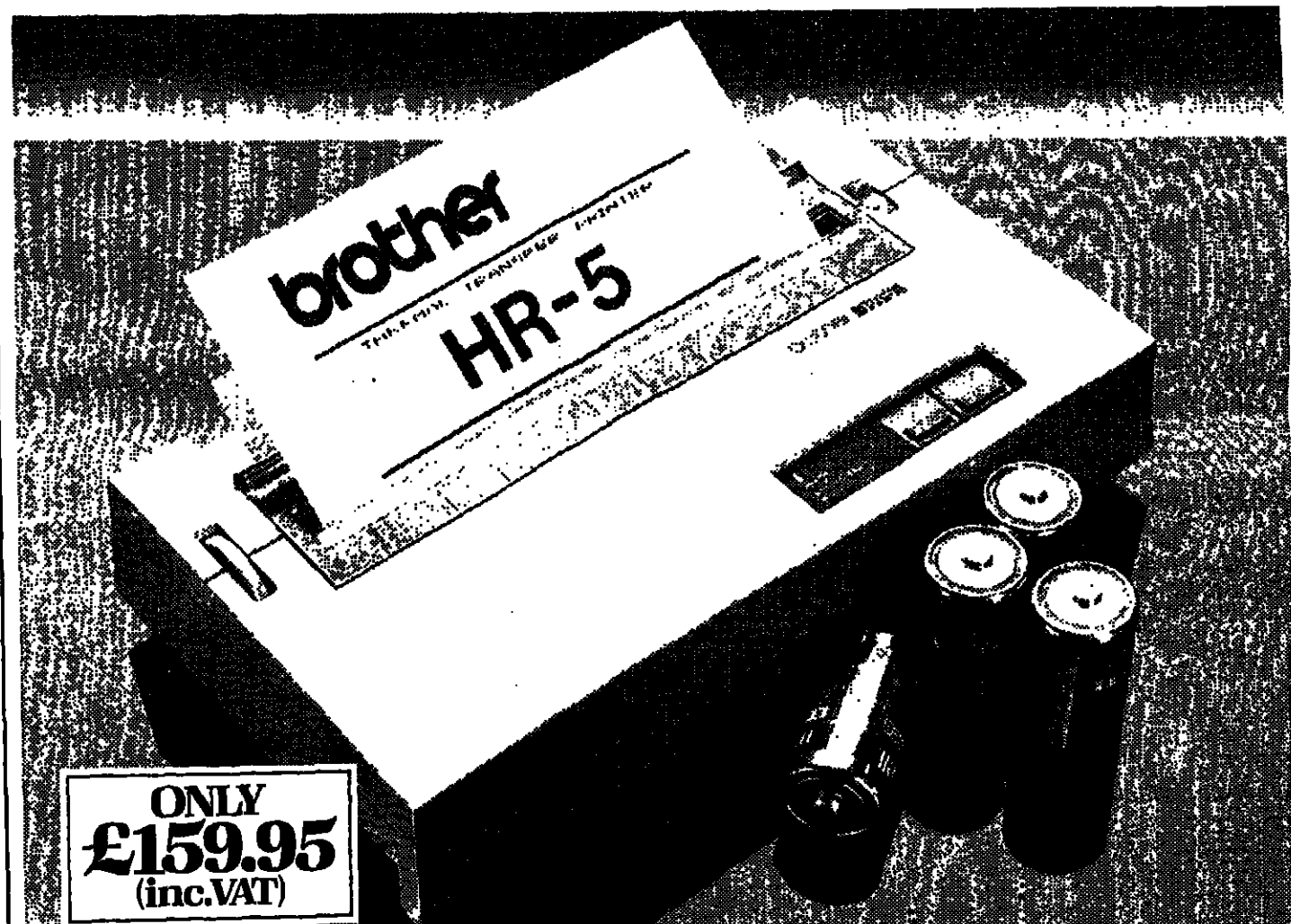
**Punctuation exercise** Passages of text can be stripped of their punctuation, even the spaces between words can be deleted. It is then up to the children to create a fair copy, either as a group exercise on the wordprocessor or in their own books working from photocopied or banda printouts.

What a day I just discovered wordprocessors they'll revolutionise my punctuation class once you start you can't stop I only hope they catch on...



How useful these ideas are and how much time can be saved will depend on the quantity and variety of text that is held on disk, for as the corpus gradually builds up the ideas become easier to implement. As more and more schools come to use wordprocessing it may be possible to persuade commercial firms to move into the area of producing anthologies of texts on disk.

P. Keane is Computer Coordinator, Backwell Comprehensive School, Backwell, Near Bristol, Avon.



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Both principal school computer suppliers are increasing the number of micros that can be connected together to well beyond 16, so that their networks can sneak out of the individual classroom and permeate the whole of a school. I have been visiting some of the pioneers, and it is strikingly manifest that, in these schools, the whole school culture is on or over the precipice of change.

It is very difficult to know how many machines the present networks will support, as so much depends on the nature of the traffic. There is the same overhead to transfer a whole file to a network machine as to store a single byte, so some software, which works well with floppy disks may have to be rewritten for networks. My guess is somewhere between 70 and 80 before response times wither, which would be enough for most secondary schools.

The schools I have visited, both in the L.A. and the private sectors have enthusiasts, tacitly enthusiastic, spearheading the change. They have also had the support, even to the extent of having in-school sabbaticals, from headmasters, governors and L.A.s; some have had the good fortune to be used by the manufacturers to try out pre-release software and hardware.

One of the interesting things to observe is that they were all going along roughly the same path. They had had, a computer classroom with some 16 machines, essentially one for every two pupils of a class; the use of the computer classroom had spread to other subjects than the one it began with; many more teachers who had not used it in classes, were using it to prepare lessons; the school administration was beginning to take it on board.

I was introduced to a girl who was a beginner using the *Quest* database package to examine some local data provided by the County Archivist, which she explained clearly to me. My hosts then told me that a fortnight ago, a newcomer to the school, she had been incapable of speaking to an adult.

Another school had three Bees used as display noticeboards, with the screen divided into the headmaster's area, sports area, staff area and pupils' area. I was told that, one afternoon, a boy sent a message by this means to the headmaster asking for permission for the school to remove uniform jackets and ties; within ten minutes his permission was flashed up on the screen. Before the network was in, it had taken at least a period to get the news round.

I don't want to waste time detailing the range of programs the various subjects areas were using. What is more important is that there were very few that had not found a use for the machines, and had not found tolerable programs to use. Some, but very little, time was spent on computer language at entry. Otherwise the computer was a resource just like the overhead projector; syllabuses had been extended, but not distorted to take advantage of its availability; so they had, too, when overhead project-



tors had become available. Of course, there were CSE, O, and A level computer courses offered, but these were a byproduct, not the principal result of getting the network. There were computer clubs, and the best programmers had been co-opted to help so that they did not amuse themselves by resetting passwords and other anti-social games.

Above all, there was evidence that, socially and educationally, computer understanding fostered individual and mutual self-respect. This is the greatest benefit computing can give the schools, just as Paper and the LOGO-group says it does.

All had used, or were on the brink of using, the network for administration: preparing UCCA forms or O level entries; hand-tuning timetables and printing out individual timetables. I think, to get the school administration on the side of computing, but partly because, after getting their feet wet, everyone concerned recognized how much time it would save even if there was an initial investment of time in starting up the system.

Turning now to technical issues, there are four constraints on the size of a network: the end-to-end length; the software; the size of the backing store; the level of network traffic. Acorn are bringing out their own Winchester disk with 10MB storage; hitherto their networks have been limited by the storage size of floppy disks. RML tell me they are bringing out a new network controller where the software does not limit the number of logged in

## In the net

John Laski on the uses and abuses of networks

stations to 16. This illustrates the way in which differing networks are moving closer to one another in their successive iterations of design.

Competition is ensuring that goodies on one design spread to another, although each design team embodies their own attitude to the balance between hierarchical and heterarchical organisation that they think appropriate for networks in schools. For example, electronic mail: some networks have it, other don't. It would be a godsend on split-site schools, and is almost irrelevant to a net that only spans a single classroom. These, and other communication protocols, will effect significantly the precise cultural effects networks will have on schools.

There are other suppliers for BBC-based networks, each with their own vision of what the schools need. SI Associates of Cambridge are the Rolls

Royce of Econet Suppliers. Get their clocks and connectors especially if the network length is over 1 km. (Econet's traffic capacity diminishes the longer the net.)

Symbolic of Croydon offer an expensive fibre-optic cable as an alternative to co-ax twisted pair for long nets. Their capacity does not decrease with overall length. E-net, distributed by GSL of Andover and PACE of Bradford are also well-established in schools. LVL of Leicester have a Winchester that they are now marketing for stand-alone Bees; I understand they were writing network software, and may have their own version on the market by the beginning of next year.

Much competition in the Beeb market is very healthy. I am sure that is the best way to discover what facilities are worth what. Do not, of course, expect all your present applications that now work with your disks to work with the net. What is important is how quickly network suppliers will extend/debug software in response to new demands.

I was very pleased to find that BCPL worked first time on a net I was lost. I was less pleased to find that, with my second processor, \*COPY failed. However, the net designer immediately located the line of code that was wrong in his clip. I would be sceptical about compatibility with Prestel and Micronet, and, of course, with TFS.

Buyers need to be very careful in specifying acceptance tests for the network they buy. Of course, if you are doing really crafty coding, say, using the reserved net interface areas as

working store, it is unreasonable not to expect to have to rewrite your programs if you move to a net. But, then, you should know enough to be able to do so. If your supplier has disappeared, say a sixth-former who has moved on, you may be in very deep trouble.

I was unable to find a split-site school with an integrated network. Such schools are often in disadvantaged inner-city areas, and most networks so far have been bought with PTA money used to supplement L.A. support or to overrule it if the L.A. policy is only to support single machines.

It is reasonable for an L.A. to say that they only have expertise to support one, and that you get another at your own risk but less justifiable to argue, as some do, that they will not contribute financially to any other. It would be a valuable contribution to the diminution of inner-city deprivation if any network supplier, were to support experiments on split sites; it would be particularly valuable if sensitive social researchers were able to monitor effects.

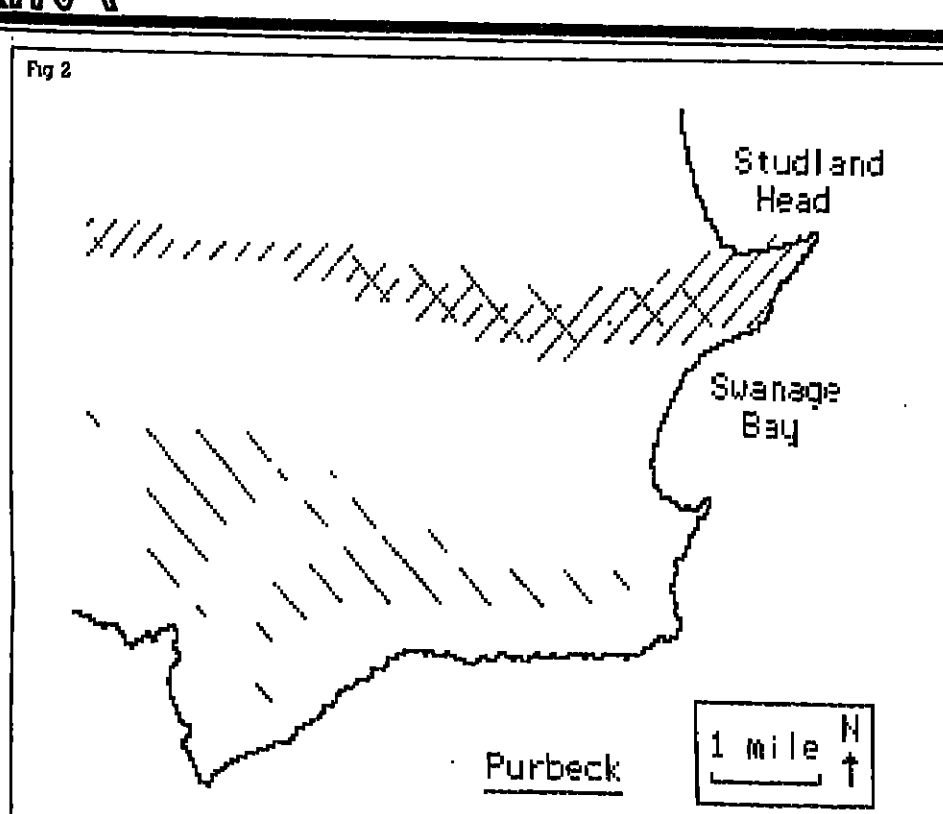
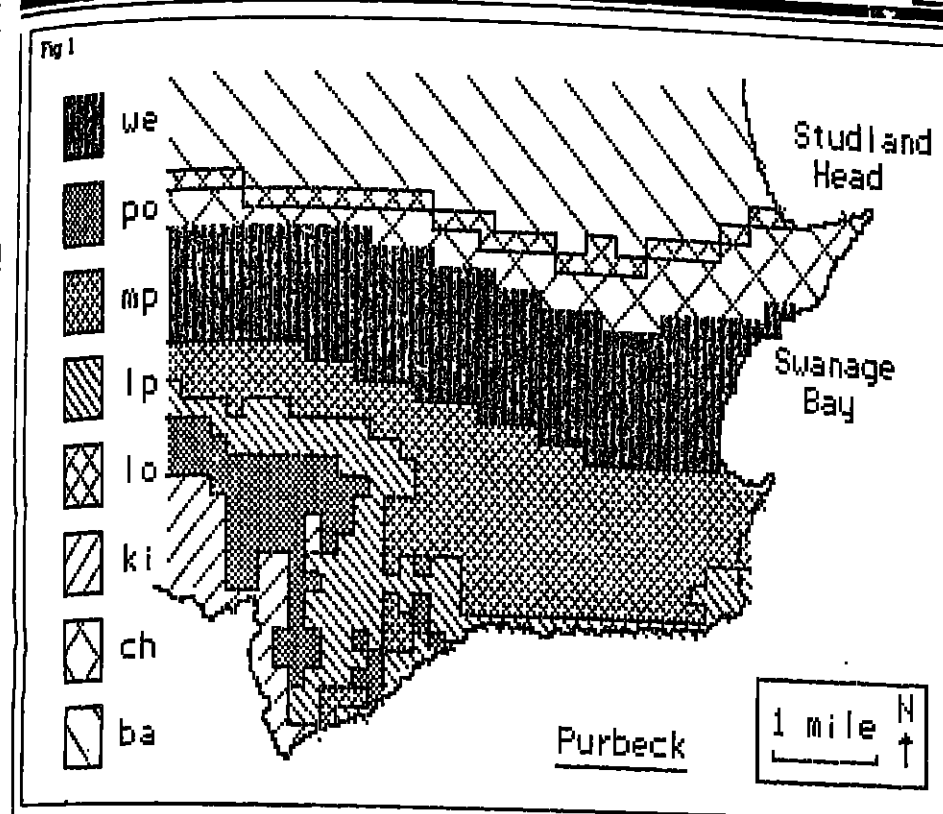
A final issue that networks have raised is the supply of educational software from the publishers. Heinemann have refused to supply any software to networks. On the other hand Cambridge University Press say that they make their money out of the worksheets and books, and the software is a giveaway.

Another approach is that of *Workwise's* suppliers some of whom say you must buy a copy for each machine on the net, although they will give you the usual wholesale discount. Perhaps, system-wide software should be sold on a log based system. £x for up to eight stations, £2x to 16, £3x up to 32 etc. Software that is subject-specific should increase less rapidly with increasing network size: say £x for up to 8, £2 (x+1/2x) up to 16, £3 (x+1/3x) up to 32.

But a more serious problem than the need for the publishers association to get their act together is the problem of piracy. If sideways RAM is used to enable ROM-based software to be distributed around the net, it is very difficult to prevent it being lifted onto a cassette or floppy disk. Schools have a poor reputation with publishers for photocopying outside copyright. Of course, any anti-piracy system can be broken if enough effort is put in to work with your disks to work with the net. What is important is how quickly network suppliers will extend/debug software in response to new demands.

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## Geographical database

by Iain Ferguson, Gerry Hones and Peter Richards

Computer assisted learning appears to be following a typical pattern of curriculum innovation with a considerable gap between enthusiastic innovators and those as yet unconvinced of its value. It is unfortunately only too easy to see a future in which C.A.L. is assumed by many to be a style only suited to a minority - that is, someone who can afford it.

How can this be prevented? If they are to accept computers teachers will have to be convinced that the microcomputer offers something which is valuable, a way of operating that is better than the existing system. For this to happen the software has to be designed to involve both teachers and pupils. The microcomputer needs to be seen as an extra aid to learning which opens up rather than limits the role of the teacher - and the pupil.

The majority of existing programs for geography focus on specific concepts and skills, often highly structured in the form of a simulation based around an interactive dynamic model. The very clarity and precision of their objectives can thus be limiting in their own right. In the classroom, the programs are designed to be used for specific parts of the syllabus.

Enquiry systems, based on databases which can be interrogated at any time, offer a variety of different ways, often much wider opportunities. Not only can large amounts of data, which can be continually added to or modified, be conveniently stored for use, but the flexibility in the way the system can be interrogated. For example, AUCB's *Microquery* allows a valuable amount of census data which can be handled to produce a variety of different relationships between different subsets through 'greater than' or 'equal to' 'The approach is essentially 'longitudinal', however, and this naturally prevents any such database being interpreted 'spatially'.

The Microelectronics in Education Programme project team at Bath, faced with the task of producing data-

based resources for use by secondary school geography teachers, felt that the limitations of such linear interrogative systems were particularly severe on geographers. It was thus decided to concentrate on the development of an interrogative system that could present information in different ways - maps, sections, or graphs - enabling accurate, rapid displays and analysis of spatial variations for single sets of data or inter-variable relationships.

*Geobase* consists of a master systems disk which controls the operation of the database supplied in a second disk. To illustrate some of the potential uses of the program, a small number of databases have been constructed by the team and teachers in the area, working as individuals or in groups. The variables used are grid-based and, because each item is identified by its own location reference, the interpretation can be spatially ordered, whether the data is 'numeric' (for example, altitude) or 'literal' (for example, rock type).

The choropleth map (Fig 1) shows the geology of the Isle of Purbeck through the use of eight rock types (a string or literal variable). This can be in monochrome or colour. The second map (Fig 2) has been created as a result of a request to the system to show those areas where the geology is given as chalk and the altitude is over 400 feet. It is also possible to produce isopleth maps from numeric variables, such as altitude or population density.

These maps can be used with cross sections and transects to explore a relationship, such as that between rock types and altitude. Such sections can be drawn along any chosen line on the map by moving the end points as desired. For visual comparison, it is possible to show up to five such sections simultaneously if wished.

More complex maps can be drawn where the database is more finely developed. A map of part of Bristol uses census data entered on a grid of much greater density than that used for Purbeck and illustrates the variation in the percentage of the population without a car in the area. A similar map could be created which demonstrates the relationship between two or more variables.

In addition to presenting information in the form of a map or a cross-section, the program can present statistical information including such quantitative measures as standard deviations, means, standard deviation and correlation coefficients as well as diagrams like histograms and scattergrams.

The result of a simple statistical analysis relating chalk and altitude in Purbeck is shown in Fig 3. The term 'matched' refers to the percentage of the region covered by the defined subset.

Histograms are another way in which data can be analysed and presented, for example the distribution of altitude over the chalk in Purbeck. Histograms can also be used for a comparative purpose, to compare, for example altitude over Kimmeridge Clay and altitude over London Clay. Another useful diagram is the scattergram, which displays the relationship between two variables. Fig 4 is an example derived from the Bristol database. It is expected that, at least to begin with, some teachers will prefer to use databases already produced - for reasons of time, confidence or accessibility of data. In this case they would have to accept the limitations imposed by the choice of area, topics, and available data and have to fit the information into their teaching syllabus.

The real strength of the *Geobase* program, however, is that it opens up possibilities for teachers to develop their own databases using the 'master' systems disk. These can range from very simple examples, taking only a few hours to compile, to more detailed exercises which could require several weeks' work by teachers or their pupils. *Geobase* offers a straightforward structured procedure which is intended to assist a teacher in preparing a database of greatest value in meeting the teacher's own particular needs.

The first task is the selection of (a) the study area and (b) the concepts or relationships to be examined, with the order of priority depending on the circumstances. Bearing in mind the availability of the needed data, particularly in spatial terms, the second question concerns the overall size and number of cells of the grid. Once this is decided, a short set of simple commands will result in the display of the requested grid. This can range from a fairly coarse grid containing a small number of cells to one comprising over 4000! The Purbeck area (Figs 1 and 2) uses a 47 x 36 grid whereas census data on the Bristol map (Fig 4) is entered on a 52 x 58 grid. Using a fine grid is only possible when the data is available in that detail.

The next task is to draw (by means of a simply controlled moving cursor) the base maps, showing whatever information is deemed necessary to provide a locational frame of reference for the user. Such physical features as a coastline or rivers are obvious possibilities, while other types of map could include roads or railways.

Collecting the data and preparing it in grid form for entering into a database could clearly range from a relatively simple operation to one which

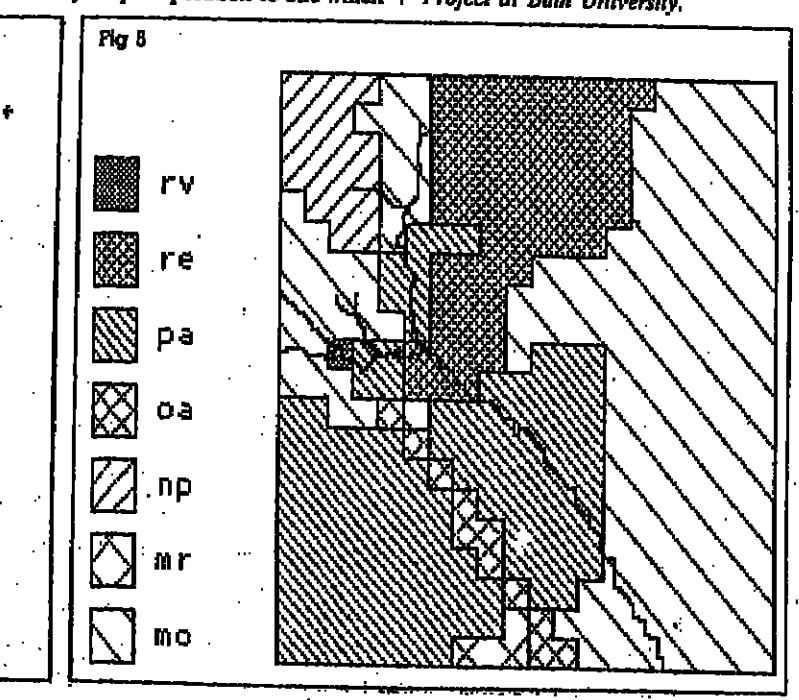
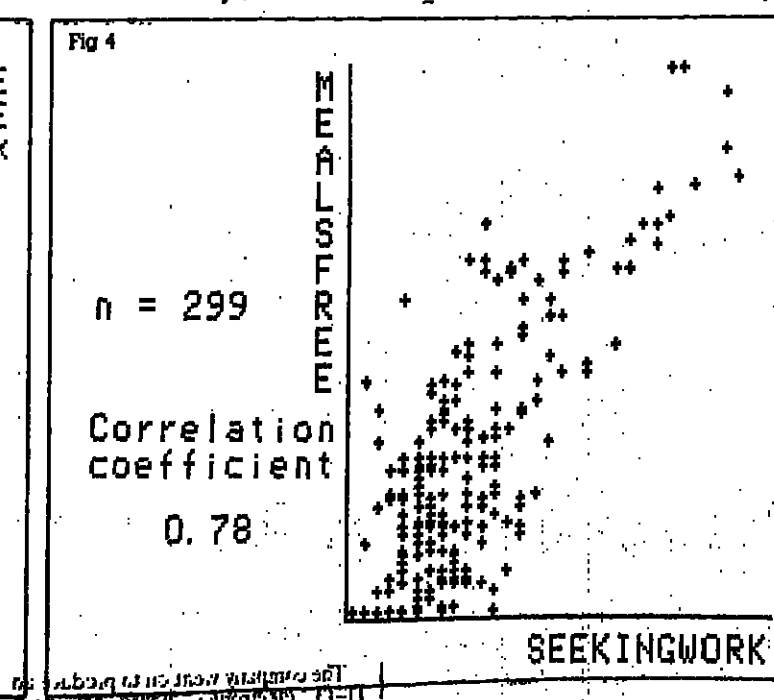
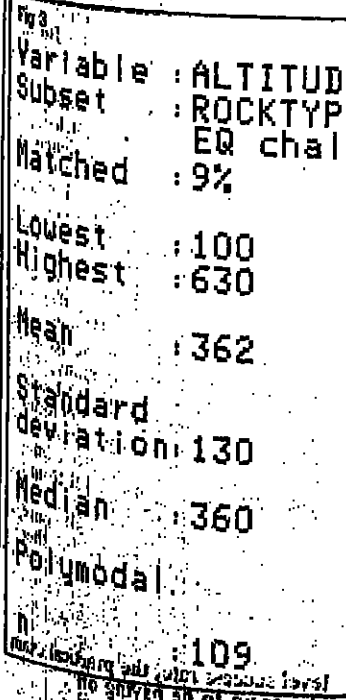
takes considerable effort and time. Julia Duckworth (St Mark's School, Bath) produced a database for an area in North Yorkshire (with a 20 x 20 grid and four variables: altitude, land use 1950, land use 1975, and geology) in a single morning (Fig 5) and has developed a number of successful exercises based on the program. The Bristol database had the maximum 16 variables entered on a 52 x 58 grid and was a major exercise for Phil Webster (Backwell School, Avon). After extracting the raw data from census records, time had to be spent on putting this data in a form which could prove useful in later interrogations.

The exercises using the microcomputer were supported by additional resources, for example the primary data sources in the form of maps covering wider areas, and also involved the operation of a printer to supply students with copies of maps and diagrams for personal use, during the exercises and at a later stage.

Clearly teachers can design their own exercises to make good use of the way the program enables rapid and accurate appraisals of the stored data. Nevertheless, the flexibility of *Geobase* is such that it is felt that a major part of its potential lies in unstructured exploration by the pupils as they create their own questions, or set up their own hypotheses, and interrogate the database in a search for results. An obvious next step, will be for pupils to create their own databases to assist some such study as an individual project. The thinking process involved in making decisions on the area limits, the number and type of variable, and some of the potential interrogative routes, will in itself be of great value even before the interrogative power of the system is used.

Will this be the real revolution after all, as pupils are encouraged to take on the responsibility for organizing more of their learning?

Iain Ferguson, Gerry Hones, Peter Richards work for the MEP *Geobase* Project at Bath University.



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TELE-BOOK is available both on tape and disc, the complete package being attractively boxed and containing a comprehensive 32 page manual, a set of 5 double-sided laminated 'help' cards, a coloured plastic 'key' card, a transparent plastic page-planning sheet (for use with O.H.P. pens), a set of paper page planning and 8 sample 'books' (containing a total of 182 pages) which have been produced by both children and adults to illustrate how various effects are achieved and to demonstrate some possible uses in the classroom.

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Through the formation of its own Research and Development company the Electronics Department of Cheltenham College for boys is seeing financial rewards as well as gaining experience in electronics and with computers.

Under the guidance of Alan Miers the Cheltenham Electronics Module was created. The first module was an operational amplifier which enabled students to test aspects of the electronic theory they had been taught. As they were not available on the market Miers made the units himself.

The first sale was to Marlborough College who bought a set of 100 of Miers' logic modules together with electronic switchboxes to put in logic chips and logic. The Electronics Lab received 50p royalty on each printed circuitboard sold.

The Lab possesses all the necessary equipment for creating their own electronic teaching aids, and with an industrial process camera the boys are able to do their own silkscreen and printed circuit artwork. Here they can design circuits and use a computer aided design system for the printed circuitboard artwork and produce paste-ups and master artwork front sides without having to employ outside resources.

The company went on to produce an electronics 'board' for prep schools, and 21 were sold to Millfield Junior School in Glastonbury.

Sales and creations didn't stop with the electronics board. The Electronics Lab branched out, producing circuitboards for underwater dive timers produced by a local firm - Birchley Products. The dive timer is now being sold in France.

Their latest venture is working for a local computer company which designs kit computers. Cheltenham designed the joystick/keyboard unit to be used with the special software supplied so that the special software supplied so that the kit can be designed on-screen.

Although the College doesn't yet have a charge for the development they will sell the firm the finished product, which is planned for sale in the USA. These designing of the Research and Development Company, Cheltenham College Enterprises Limited. The Department has been before the College council and has now been granted approval to produce a limited company, pending approval from the Charities Commission.

Says Miers about the Lab: "They are supposed to be theory courses but it sinks in much better if you give the boys a practical example of each electronic 'building block' encountered. And with 98 per cent level success rate, the practical examples seem to be paying off."



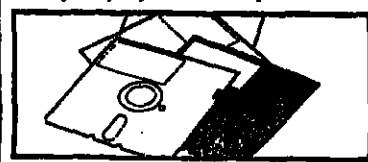
EXTRA

# Room for Prolog?

Tom Conlon on a project which is looking at the language's potential in education

Although valuable early work has been done with PROLOG, the full potential of the language for education remains uncertain. True, it has been demonstrated that applications at the level of simple information handling are feasible (1). But is Prolog to be considered a serious candidate for full-blown educational programming? Could it replace (say) BASIC, LOGO or COMAL as the main language for computer studies courses in the upper school, for example – and if so, what are the arguments and the implications?

At Moray House College, a project is investigating these questions. Teaching material has been developed, tested out with pupils and evaluated. This article offers some comments resulting from the work. First, however, it will be useful to outline briefly two points which prompted the effort initially. First, a fundamental criticism of imperative languages such as Basic, Logo and Comal is that they force programmers to mix logic (that is, knowledge about the problem being solved) with control (which specifies how the knowledge is to be used to solve the problem). Consequently, programs are difficult to construct and understand. Separating the knowledge from the control component has substantial advantages (2). These advantages are of prime relevance to educators because they profoundly relate to clarity of purpose and expression.



Prolog is a declarative programming system which makes such a separation possible. In Prolog, the human provides the problem logic in the form of a database of facts and rules whilst the computer supplies the control (the Prolog interpreter can make deductions from the database). Micro-Prolog, a version of the language which schools can use, is now available (3). Second, programming in schools will ultimately justify its place not in pseudo-vocational terms, but as a means of developing logical thinking skills and problem-solving abilities which have wide applicability. Arguably however, the "logical thinking skills" associated with conventional imperative programming are too closely bound up with the control of a machine's behaviour – and therefore, too "special" – to be of much use elsewhere. And instead of (procedurally) structured programming, a better model of problem-solving might be one in which appropriate knowledge is clearly identified and subjected to analysis in order to derive conclusions. Computationally, these considerations seem to point to an approach which uses Prolog.

We shall now turn from theory to practice. Our work to date has been aimed at groups of pupils drawn from O-Grade mathematics classes. The approach has involved a conventional blend of class teaching, paper-and-pencil exercises and hands-on practical work with class sets of either ZX Spectrum or RML 3802 computers running Micro-Prolog. Course duration has ranged from six to twenty hours. A book based on the approach used will be published shortly; this should serve the dual purpose of providing an accessible introduction to Prolog programming, as well as offering some useful teaching ideas (4). What follows are some brief observations which arise from our experience.

Introductory Prolog work seems to pose few problems. Facts and rules can be developed informally, first in English and then in Prolog, by describing the scene at an imaginary party. Pupils soon become accustomed to reading and writing facts like:

ill (Janet) if smokes (Janet).  
Queries are introduced as questions which ask the computer to solve a problem using the knowledge (data)

base). For example:  
which(x; enjoys (lan x))  
is (ill (Janet))  
(YES)

The learner's motivation at this stage stems mainly from the experience of communicating with an "intelligent" machine which can answer such queries correctly. Paper-and-pencil exercises include the translation of English sentences such as: Ian is jealous of anyone whom Janet likes into Prolog. Compared with, say, Logo or Comal, the syntax of Prolog is very simple and pupils have little difficulty in coping with the three atomic forms: PREFIX ill (Janet) enjoys (lan x) INFIX Jan enjoys x POSTFIX Janet ill. This, together with the declarative (self-evident) semantics of Prolog, ensures that elementary Prolog programming is more or less plain sailing.

Non-trivial Prolog programming requires an understanding of how the Prolog interpreter works. Hence, unless learners are to be confined to very simple information-handling applications, it is essential to introduce them to the "procedural semantics" – that is, the way in which Prolog uses sentences as procedures for solving problems. To this end we applied a variety of teaching devices. One example is the analogy with English: it can be pointed out that an English sentence such as: Any friend of Diane's who enjoys reggae will be invited to Sam's party. (In addition to the obvious declarative meaning) also be read as a procedure for solving the problem of how to obtain an invitation to the party. This procedural interpretation is:

To be invited to Sam's party:  
1. Become friendly with Diane, and  
2. Develop a taste for reggae.  
– which reduces the original problem to two sub-problems. Prolog's use of database rules is essentially the same as this.

The concepts involved in understanding the behaviour of the backtracking Prolog interpreter are quite difficult. Future declarative systems should ease matters, but at the moment the need here is for skilful teaching. As a welcome by-product, some nice work in logical analysis emerges – studying an artificial intelligence seems to be a useful way to sharpen a human one.

Prolog is a list-oriented language, like Logo. Lists are best introduced as terms which can represent complex (structured) objects, so that: ((Mary Jones) (23 East St Newham) (556 8455)) is entry for example is a (postfix) fact in which a list of three members represents a telephone entry. Unlike Logo, however, learners can use pattern-matching to access the members of the list, so that:

y lives-at x if (y x z) is-entry is a sensible rule. Pattern matching is a powerful aid. Very helpful too is the Prolog list notation, in which (XY) denotes a list which has X as the head (first member) and Y as the tail (the list of all the rest). Conceptually, this "picture" of a split list offers learners a prop; it seems to be significantly more natural than the imperative:

MAKE XY FIRST Z.  
MAKE Y BUTT FIRST Z.  
(where Z is an arbitrary list) of Logo, although proper comparison needs more space than is available here.

Prolog relies heavily on recursion. This has always been regarded as a difficult concept in traditional programming, at root because the corresponding underlying machine behaviour is complex. Fortunately, Prolog sentences do not have to be understood behaviourally. We introduce recursion in a low-key way, initially through list processing. Sentences such as:

is-member-of (yz) if x member-of z  
("x" is a member of a list if it is a member of the tail) make sense without knowing how the computer

gets them to work. That comes later (procedural semantics again) and can be difficult. At least, however, an understanding at the declarative level can pave the way.

Given that a primary concern is to develop transferable problem-solving skills, clearly the nature of the problem-solving work which is enabled by a learner's understanding of Prolog is crucial. The question arises as to whether or not learners should be presented with a problem-solving framework, and if so, what the framework should be like. We teach a framework which incorporates some of the heuristics of Polya (5). Knowledge is identified and elaborated top-down, starting with a "global" specification of the solution and ending with the detail (so-called "top-down description"). At each stage, considerations of logic come first ("How can this relationship be defined?") and those of control follow ("Will the definition work?").

The intention is to emphasise problem-solving as a process in which such knowledge is identified from which useful results can be obtained. Polya's heuristics are shown to be useful to the process, just as they are useful in problem-solving generally. Subjectively, we consider this framework to have had some success – but the question remains very open.

Identifying suitable practice problems needs thought. Most obvious are routine information processing exercises. More interesting though are the many nice problems with an artificial intelligence flavour which bring within reach, such as maze-solving and (simple) strategy game programming. Where necessary, learners can be provided with a "tool-kit" of helpful definitions (which in micro-Prolog can easily be made to look like part of the system).

As yet, we have not tried graphics programming. We intend in future to investigate problems in which learners are provided with databases containing substantial quantities of knowledge relating to some domain or other – this should offer a route whereby some really significant problems can be tackled. Educational experience of the declarative programming style is very limited, and much more work is needed. To us it seems clear that Prolog offers a promising vehicle for a genuine educational programming approach to problem-solving. It offers an alternative to the machine-oriented, imperative style which currently prevails. But Prolog is not

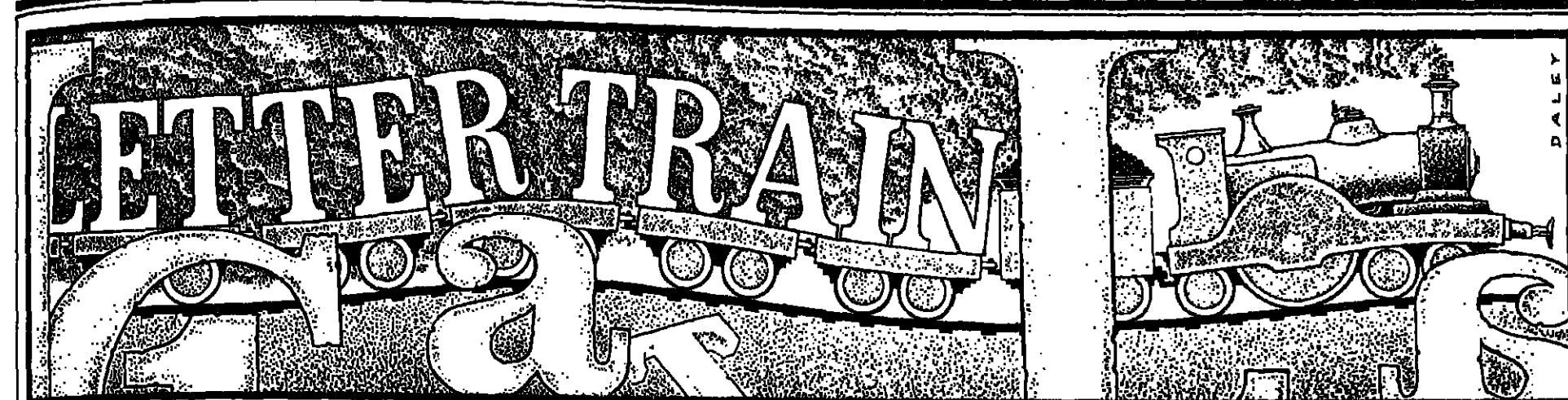


penance: non-trivial Prolog programming might be beyond younger children and the less able, for example. Finally, whatever the merits of the approach, curricular realities present obstacles. Secondary courses for the 14-18 age group are prone to an enforced standardization which, in the fast-moving context of computing, is stifling. Will the course writers and the examination boards have enough knowledge and imagination to make room for Prolog?

References  
1. See for example, Ennals, R. "Beginning Micro-PROLOG", Ellis Horwood, 1982.  
2. Kowalski, R. *Algorithm = Logic + Control*, CACM, July 1978.  
3. Micro-Prolog is available for the ZX Spectrum from Sinclair, and shortly for the BBC micro from Acornsoft. Contact LPA, 70 New Street, Henley-on-Thames, for CPM and other versions.  
4. Conlon, T. *Problem-Solving with PROLOG*, Addison-Wesley, in press.  
5. Polya, G. *How to solve it*, Princeton Press, 1948.

Tom Conlon is lecturer in Computer Education at Moray House College of Education, Edinburgh.

EXTRA



Michael Thomson on the value of computers in educating dyslexic children

Dyslexia is a severe difficulty with the written form of language, independent of intellectual, cultural and emotional causation. It is characterized by the individual's reading, writing and spelling attainments being well below the level expected, based on intelligence and chronological age. The difficulty is a cognitive one, affecting those language skills associated with the written form, particularly visual to verbal coding, short-term memory, order perception and sequencing.

It should be emphasized that dyslexic children are normal in other ways, particularly in their intellectual capabilities and understanding. But the remediation of dyslexic children requires a very specialized teaching programme which is structured, sequential and cumulative. A good deal of overlearning and overteaching is also necessary because of the difficulties in retaining letter patterns, sound/symbol associations and spelling.

Owing to attentional, memorial and other difficulties, the dyslexic will need the same material to be presented over and over again, whether via different modalities, in games, in reading or in spelling. The dyslexic child will not "catch" the rule unless they are continually reinforced. In this area computers can be helpful. In general, the dyslexic child needs to be taught the phonic aspects of written language. At present, it is difficult to program the computer properly for the important auditory or sound components of written language learning and, indeed, there is no substitute for good, carefully programmed specialized teaching.

Having said this, however, there are advantages and disadvantages in using computers with dyslexic children. There are advantages in the fact that new motivation is provided in a "failed task" and essential overlearning can take place. Also the response to the child is immediate, providing important reinforcement. The child can dictate the pace of learning without the computer being judgmental. Learning to program can itself aid sequential thinking, and written language structures can be stored and accessed.

The disadvantages, however, are the auditory component of written language is difficult to program properly and multi-sensory teaching is not yet available. The computer has only a limited reaction and program modification in response to a child's error. Also reading teletext and instructions can be difficult for dyslexics, and "therapeutic" teaching involving human contact is missing. Some of the hardware limitations in relation to the auditory component are clearly being tackled; for example, the use of sound chips to produce words, and the use of digitized speech production, although the latter is very expensive at the present time.

We have been disappointed at East Court with the commercial programs to learn how to read, write and spell. The majority appear to be of the over-learned "matching a word" type where, if a child gets the correct kind of reward, there is a tick or some other such as *Word Hunt*, which requires children to produce as many words as possible from a longer word, and give a score at the end, merely serve to highlight the dyslexic child's deficiencies.

This type of game may be fun for children without learning difficulties but it provides no help or teaching for the dyslexic without considerable teacher intervention. Programs such as *Order*, in which words, or sometimes sentences, must be re-arranged to make sense, may appear to provide

useful exercises for dyslexics. However, many of them require a high level of literacy. This makes it difficult for the dyslexic child to undertake the initial reading component required to understand the task. This is a common criticism of many programs.

As a result of disappointment with some of these programs, and the common finding that they are either poor use of the computer's capabilities

or, conversely, a superb program with use of sound and graphics but poor educationally, we have been forced to develop some of our own programs, based on the specific needs of dyslexic children.

Work undertaken should match the particular teaching received from the teacher. A central use of the computer can be to provide the essential overlearning, reinforcement and additional motivation. Other uses can train the

child's memory and difficulties in sequencing. For example, one of our programs, *Train*, involves picking up letters from around a track. The crucial component is the development of sequencing and letter order in picking up with alphabet sequences that relate to dictionary work or particular words being taught elsewhere in the written language programme. Another program called *Sound Match* enables a sound cue to be taken

off a cassette tape. This controls the program on the computer screen which, although essentially for letter or word-matching, has the advantage of a matched auditory cue. It is important that the words or letters used are carefully chosen to match language structure. The program starts with individual letters, followed by cvc words, consonant blends, vowel dia-

continued overleaf

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The programme of courses listed above is the successor to the NUT's 1983/84 series of microelectronics courses. This programme has developed from the success of the first series. There will be slightly less emphasis on the acquisition of practical skills, more on using the benefits of computer assisted learning and on different forms of software in all areas of the curriculum. A major area to be explored is how schools can develop policies that disseminate these benefits to all children.

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the telephone box.

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Disadvantages

It is on a chrs road so cars going back and forth will have great difficulty passing each other. It is very far away from some houses.

This short essay by an 11-year-old dyslexic boy is revised in stages on a wordprocessor (below)

## Letter train

continued

graphs and more complex letter patterns.

Some programs try to emulate particular teaching methods that are used for dyslexics, for example laying out the alphabet in wooden letters across a table. The child then indulges in games like Moving Target, picking out appropriate letters, re-arranging the alphabet and making up words. The computer has been used here to provide an additional reinforcer, using the same kind of teaching procedure in a different medium. This provides motivation and novelty.

A crucial component in all these programs is that they derive directly from the particular written language structure that is being taught. The techniques and methods used by the teachers have been examined and programs developed which are absolutely relevant to the teaching situation.

Another crucial aspect is that they have been developed with the children themselves. It is a chastening experience to have a child discover a bug within 30 seconds of trying your brand new program. Children can provide very useful feedback, not only in terms of whether they find the programs enjoyable, but also in what they find easy or difficult in their own learning needs.

Wordprocessors are extremely useful tools for helping the dyslexic. Not only is wordprocessing a skill that will in future be needed for everyday life, but it is an important aid to literacy. A child with very poor writing style can gain tremendous satisfaction from seeing his or her work printed out in fair copy form. All our children are taught some of the basic word-processing commands how to get their work onto screen and simple editing and printing commands.

As the children get older they can learn more sophisticated techniques. Having produced some written work, they can, rather than making a fair copy, put it straight onto the word-processor and change the spelling, by use of a dictionary or guidance from the teacher. Punctuation may be added, words deleted, whole paragraphs shifted around to make the sequence more logical. Systematic spelling mistakes may be corrected by using commands that change the spelling throughout the text and layout can be improved by justification, use of margins and tabulation.

Many of our children take a great deal of pride in producing their work on the wordprocessor and, surprisingly to us, they have no difficulty in translating from upper to lower case and vice versa.

It should also be noted that a necessary component of word-processing skills, if a child is to develop sophisticated techniques, is typing. This can be taught either on computer (Via-Type is fairly useful), or in separate lessons, forming part of the curriculum.

The child's original attempt can be followed by versions typed onto the wordprocessor. (These are essentially combinations of various versions that were edited.) The procedure involves discussion with the child on spelling, punctuation, and layout.

the telephone box.  
Disadvantages  
It is far from the other end of the village. It is by the school and might get vandalised. Church is a lot away from the main road and it must be quiet. There is a lot of room for cars and car parking spaces.  
Disadvantages  
It is on a chrs road so cars going back and forth will have great difficulty passing each other. It is very far away from some houses.

Version 1

the telephone box.  
Disadvantages  
It is far from the other end of the village. It is by the school and might get vandalised. Church is a lot away from the main road and it must be quiet. There is a lot of room for groups and car parking spaces.  
Disadvantages  
It is on a chrs road so cars going back and forth will have great difficulty passing each other. It is very far away from some houses.

Version 2

the telephone box.  
Disadvantages  
It is far from the other end of the village. It is on a narrow road so cars going back and forth will have great difficulty passing each other. Another disadvantage is that it is by a school and might get vandalised. It is a far distance away from the main road and it must be quiet. There is a lot of room for car parking.

Version 3

The telephone box.  
Disadvantages  
The telephone box is far from the other end of the village and it is on a narrow road so that cars going back and forth will have great difficulty passing each other. Another disadvantage is that it is by a school and might get vandalised.  
On the other hand, it is a far distance from the main road and it must be quiet there. There is also a lot of room for car parking.

Version 4

layout. At each of these separate stages a version is saved (a disk drive is helpful here) and then printed out. The work is undertaken by the child, with the teacher acting as adviser.

The wordprocessor can also develop worksheets for the teacher, for example in punctuation. Teachers can develop exercises that require to be punctuated. Each child can print out the original copy and then a version with his or her own punctuation. Following discussion in tutorials, this can be corrected easily without a laborious re-write.

LOGO can be particularly useful for dyslexics and children get immense enjoyment out of using it (eg Logo Challenge). The computer provides immediate reinforcement and Logo, in particular, helps the development of logical sequencing skills. This is, of course, a precursor to computer programming and is a very important skill.

Another advantage of Logo is the development of mathematical skills. Many dyslexics have difficulty with arithmetic, both in basic operations and in recognizing number values. Making the "turtle" move round on the screen helps to develop an understanding of angles, shapes, directions and sizes, all important components of mathematical thinking.

Various other programs can be helpful, so long as their literacy expectations are not too high. Many of the adventure games, eg The Hobbit, Quest, and particularly Flowers of Crystal, help to develop reading skills and children love playing them. They can develop fairly sophisticated language and reading skills, at the same time as putting basic instructions into the computer. The consequent development of maps and, in the case of The Hobbit, the accompanying book, are all important components in developing literacy skills.

Programs involving "cloze" procedures are also useful. Here, the teacher can set up a text into which the child must put the missing words. In Copywrite, the whole text can be deleted. The particular advantage here is that one can create one's own text and match it to the child's given reading level. This is a most important element missing from many programs. It is also possible to produce a series of cloze procedures geared to specific children or groups of children with particular reading ages or abilities.

The Tree of Knowledge and Facile are two helpful programs for primary and middle schools. They require logical thinking, sequential ordering of material and facts and they develop keyboarding and reading skills associated with subject areas, without too much stress on exact spelling answers. Many of the children particularly enjoy Tree of Knowledge and Facile for their own tree structures and organizations despite the spelling mistakes they make in typing in the information. Use of Facile can extend to other subject areas, such as history and geography, and the children enjoy creating their own sources of information. This is important training in the use of data but it also teaches written language skills.

As far as the teacher is concerned, these databases can be invaluable for keeping records and assessment information. One important aspect of helping dyslexic children is undertaking detailed assessments: monitoring performance and keeping a full record of what teaching has been given, what the results were, and the consequent improvements in reading, spelling and writing.

Dr Michael Thomson is a child psychologist and co-principal at East Court School for dyslexic children.

References: Word Hunt (Acomsoft); Order (Acomsoft); Via-Type (BBC Soft); Tree of Knowledge (Acomsoft); Facile (Cambridge Micro Software); The Write (ESM); Quest (Acomsoft); The Hobbit (Melbourne House); Flowers of Crystal (East Court Software); Sound Match (East Court Software); Moving Target (East Court Software); Logo Challenge (Addison-Wesley); Powers of Ten (Addison-Wesley).

EXTRA

Printmaster (Epson)  
ROM for BBC Micro and Epson  
printers  
Price £33.35 inclusive  
Computer Concepts Ltd, Gaddesden  
Place, Hemel Hempstead, Herts HP2  
6EX (tel: 0442-639333).

"Screen dumps" sounds like a form of depression induced by watching bad television. In fact a screen dump is a point-for-point copy onto paper of everything that appears on the computer screen, text and graphics. There are immense educational rewards in the power to capture all those lovely computer graphics and fancy jumbo lettering on the familiar and permanent medium of paper.

Although most schools contain dot-matrix printers fully capable of producing "multi-tone" screen dumps (ie ones using shades of grey to represent colours), very few teachers ever use this facility. The reason is simple: most printer manuals are actually user-hostile.

Over two years since I started using an Epson for wordprocessing, I still find incomprehensible the manual's explanation of things I do routinely. My limited ability to control the printer was hard-won during a battle with the manual that lasted for weeks. Exhausted by this effort, I never regarded the section on screen dumps as worth embarking on.

Then Printmaster arrived: instant screen dump power. Just type "GDUMP" at a suitable moment and multi-tone pictures emerge from the Epson. Microprint, Graphics ROM wherever. Watching the gradual build-up of dots is fascinating, and you can add "arguments" (variable numbers) to control the size, placing and orientation. You can also specify two-tone dumps (faster than multi-tone) and inverse colour (swapping black for white), and vary the x and y sizes independently, thus correcting the tendency for circles to become ovals. Screen dumps are possible using "WINDOW" to define a window.

The Printmaster dumps are 5 to 10 times faster than BASIC routines I



## SCREEN DUMPS

Jacquetta Megarry on a means of easily producing point-for-point copies of computer text and graphics on paper

have seen. Unlike some alternative products they work correctly in Mode 7 with only the restriction that you cannot vary the size or orientation. If you use the latest Wordwise you can incorporate Printmaster effects into text using its powerful OS command. This means that a graphics letterhead appears at the top of each letter, or a labelled graph forms an integral part of a worksheet.

You can add screen dump options to existing software - commercial or home-grown - as long as it permits normal access to \* commands and is not over-protected. However, my

attempts to dump from Edfax and from Microtext gave my printer what looked like a nervous breakdown but was probably memory conflict. (None of the three firms concerned has been able to resolve this: they all say that "someone" must be breaking the rules, but nobody is admitting it so far.)

Printmaster includes many other printer utilities; there is space here for only a summary. \*GPRINT prints text in various sizes, orientations and shades. \*TPRINT produces jumbo characters on screen as well as on paper, made up of characters instead of pixels. \*FDUMP allows you to print a

spooled file (Basic program or text) while continuing to use the BBC almost normally.

The \*DEFINE facility allows easy design and editing of user-definable characters (eg logos or symbols) using the cursor keys, without recourse to paper-and-pencil or binary number conversions. Your characters can be saved and re-loaded later, and can be displayed, manipulated and printed using the other Printmaster routines. School magazines, like MEP newsletters, may find this a fast and effective way of improving presentation and breaking up large blocks of text.

SOFTWARE  
REVIEWS 59-64

Well done!

Programmers of any age will appreciate the potential for arcade games.

Printmaster also has a set of commands to control frequently-used printer effects like bold face, subscripts and underlining. For example, \*FONT followed by a number selects one of the printer's international character sets. Others seemed less valuable in practice. Although \*UNDERLINE OFF looks friendlier than OC27.45.0, it takes just as long to type it out.

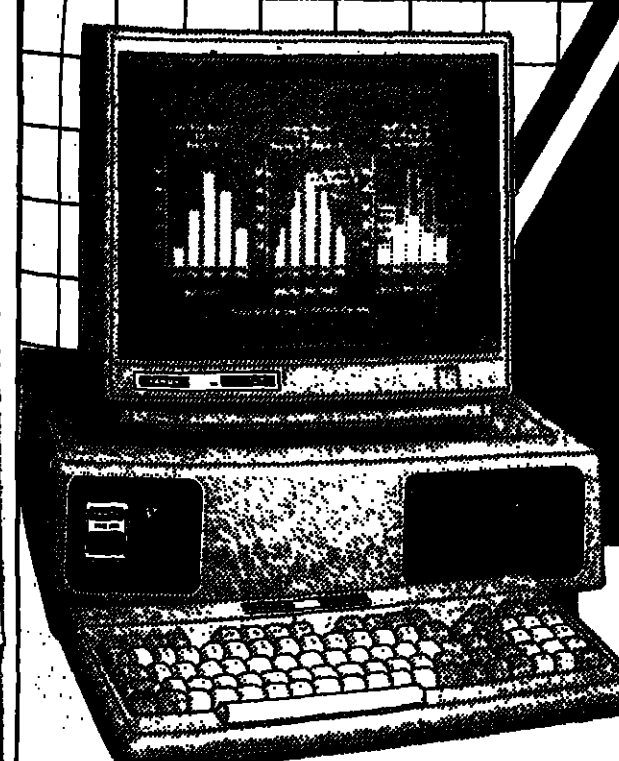
If you have to re-define two red keys (using \*KEY) to turn underlining on and off while wordprocessing, the main advantage of the Printmaster codes is that they are easier to remember. In practice I let a IBOOT file do the remembering, so the only advantage is that the effect of the Printmaster commands is more transparent.

The Printmaster ROM is easy to use, and a Help menu reminds you of the commands available. The manual is crisp and intelligible, with an explanatory summary of error messages, arguments, and an invaluable three-page summary of Epson control codes, showing which apply respectively to FX, MX and RX printers. I use this routinely in preparation to my Epson manual. If only it had an index it would be hard to criticise.

The Epson was a natural first-choice printer for Printmaster to support, as Epson-compatible printers dominate educational computing. Other versions are in preparation: contact Computer Concepts if in doubt. No BBC-controlled printer should be without one.

Printmaster (Star) will be released during November.

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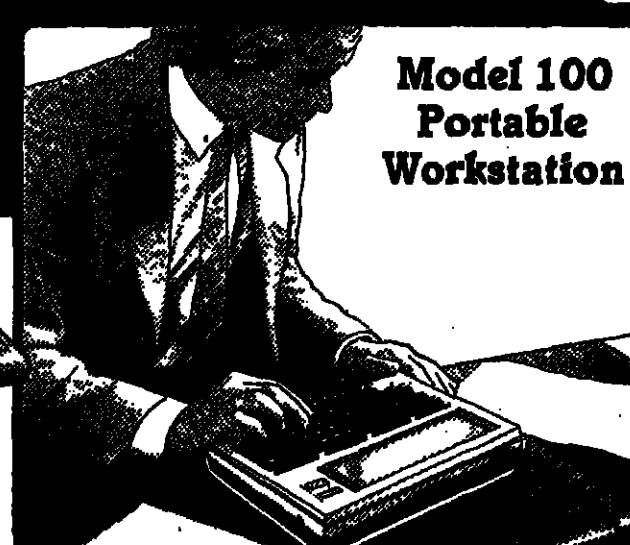
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## Heads down

John Bald on some spelling and textgrading programs

An Eye for Spelling  
By Cripps  
Disk for BBC Model B, £12.95 + VAT  
ESM, Duke St, Wisbech, Cambs  
PE13 2AE.

Most spelling programs have been produced by computing enthusiasts who know nothing about learning to spell but are keen to turn a chore into a game and show us a few tricks. Mr Cripps, by contrast, knows the research, has made a real impact on in-service training in teaching spelling, and will use the computer where it suits his purpose and no further. His program is polite, addressing the child by name and minding its ps and qs, but contains no tricks. Instead, it offers to play a small but important part in learning to write.

An Eye for Spelling is based on the

word-bank approach, and its central idea is that spelling is a visual and motor skill, in that order. Its basic teaching technique — look, cover, write, check, with words that look alike grouped together — is supported by research dating back to Grace Fernald's work, in 1943, and is therefore not dependent on computers.

However, word-banks can cause storage problems in a primary classroom, and telecreens encourage children to look hard. If they want to keep the words they learn, though, they must write them out after they have finished and never copy them from the screen. There is, deliberately, no print out.

The program provides each child in a class with a short practice session on a particular letter-pattern. The teacher may either select a group from the program or else compose one on the basis of a child's work. The program's program "ache", for example, comprises: teacher; preacher; reaches; bachelor; and moustache.

The child is shown the pattern and the words, which are then re-com-

posed on the screen around the pattern. Next each word in turn appears briefly and the child tries to write it using the keyboard. A correct entry receives a "well done", while an error remains on the screen beside the correct version, so that the child can see exactly what he needs to put right.

The computer keeps a record which is quick and easy to check, and once the children are used to it, the program might take five minutes or so to run. Two reservations are that the program's age-related grouping of words could upset some older children, and that a capable speller who could just glance at a word to write it, cannot skip the cumbersome process of watching words building up on the screen.

The program's success will depend on the quality of the writing activities which surround it and on the teacher's understanding of its principles. If, however, easy to use and the first spelling program I have seen that is based on research rather than gimmickry. As and when teachers come to have less restricted access to computers it could prove to be very useful.

Reading and Language Skills  
By Helen Smith  
Cassette for BBC Model B  
Price £12.95 + VAT  
Macmillan Software, Little Essex St,  
London WC2R 3LF.

In a letter to the reviewer, the publishers present these six programs, originally designed for the home market, as "a comprehensive reading package which will meet the needs of teachers in search of quality software for the BBC". In fact they comprise three fairly limited word games, with three further programs devoted to the isolated recognition of initial consonant blends.

The games respectively invite the user to select the odd one out of three words, to match two words which are in some way related — an example given is "rhubarb" and "custard" — and to split up and reassemble compound words. Correct answers are rewarded by the appearance on screen of rockets and flashing stars, or else by a tune such as "Amazing Grace" or "Swing

Low, Sweet Chariot". Children can construct their own files of words from which to play the games.

I will admit to being easily pleased, and found some of this mildly amusing. However, I draw the line at matching the letters "br" in a box with a picture of a broom. The blends programs really do involve no more than this, and sometimes without the pictures. The handbook's claim that the programs cover "all initial consonant blends" is unjustified — the list of pairs is incomplete, while three-letter blends are not mentioned.

How could the publishers describe these programs as "comprehensive" and "ideal for a wide range of age and ability levels"? Perhaps they think they are writing for people who don't know what they are doing. For some purposes these programs might be a marginal improvement on taskcards, but this is far too little to justify their general use in schools. Yet they appear to be quite typical of the vast output of programs for home computers, which teachers rarely see and which make a poor substitute for children's books.

Textgrader  
Disk for RML 380Z, disk and cassette  
for BBC Micro  
Price £25 + VAT  
Hutchinson Publishing Group, 17-21  
Conway Street, London W1.

Textgrader provides automatic estimates of the difficulty of a text on the basis of any of seven systems — Mugford, Fry, Flesch, Sano, Fog, FORCAST or the FIP index.

The user needs only to load the program, type in a sample of text, and read the score. The normal sample for these indices is 100 words, and the computer will either give a score for one or calculate an average result for up to seven samples. It also counts the hundred words.

The simplicity of the operation is both a boon to teachers who use these systems and a demonstration of their essentially mechanical nature. They basically measure combinations of

As the authors of Textgrader point out, the indices take no account of any of the human factors involved in reading a text, or, for that matter, of its meaning. Even so, they may have a margin of error of up to a year in either direction, and the Mugford index is the only one of the seven which is said in the handbook to allow for repeated words within a sample.

The shortcomings of the tests have been described in more detail by Tom Arkell in *Teaching History* (No 30, February 1982) and by Katharine Parrera in *Linguistics and the Teacher* (R Carter, ed 1982). On the other hand, they have certainly helped to identify texts, particularly in science, which were clearly far too difficult for the children who were asked to use them, and have in the process made a significant contribution to language work in secondary schools. Their availability in this automated form is, therefore, a useful development and may even master the day when we no longer need them.

## Filler

Capilli  
A computer assisted language learning system.  
Three disks for the BBC Model B  
Price £25 + VAT  
Pinnar Software, 128 Long Acre,  
London WC2E 9AN.

This package is intended to open up the world of computer assisted learning to the language teacher who is not a computer expert. As the author says, a great deal of the routine, proved, needed in learning a language seems to be adaptation to the computer. This program allows the teacher to write exercises in six character sets covering the main western European languages.

There are seven types of exercise possible, which are all variations of filling in gaps, eg putting in a missing word, entering the correct form of a given verb. Three of the exercise formats give help, such as first or last letter and number of letters, when requested. Two attempts are allowed for entering the correct response and, when there is a help routine available, a further attempt is allowed after each clue is given.

The performance record of each student is stored on file. Each record will show the student responses at each stage and, where appropriate, the order in which help was requested. These records can be accessed by the teacher either as part of a student file or as exercise file. So the teacher can get a very clear picture of how each student has performed.

It is true that the teacher does not need to be a programmer but he will have to be competent in operating the Apple II. The system requires a double disk drive and utilizes three disks which must be copied before starting to write anything. The system uses a Sup'R Tarnant to give 80 columns and a shift codification must be made. Without this the character fonts will not come into operation and only upper or lower case (but both) can be used, which makes it difficult or impossible to call up records. These features can be quite intimidating to the very people an authoring system might be expected to assist.

The instructions for writing the exercises are clearly structured but involve a great deal of attention to detail and keeping notes of several reference numbers which are necessary for future use.

There are a few details which a user should not be bothered with, eg using control keys to set the shift and entering a number more than once if it occurs more than once in a course set. When the program is running there are a few genuine problems for the user as the text of the question being answered scrolls off the top of the screen while the student is still trying to work on it. This makes the answering process even more of a guessing game than usual. The 80-column presentation may make it rather hard on the eyes of the student (and teacher) if used for more than a short time.

The follow-up to each exercise is intended to be a review of the exercise or, in setting up the system would be a revision work required. These could be triggered by the score achieved in a test. Where a student has a satisfactory score the system could suggest the next exercise. So much has been taken in storing the exercises that it seems a pity not to use them for more than presentation to the student.

As it stands this is a system for writing and administering tests which is quite complex to handle. No doubt the technical hitches will be ironed out in the new versions for the BBC and Apple II. I would also suggest it is a pity to put more emphasis on the testing aspect of CALL by incorporating features such as those suggested above. In its present form I am sure the teacher would find the system more of a nuisance than a help. In a teaching/learning situation where the teacher/student contact time is limited, this could be a useful way to

Ellen O'Farmer

EXTRA

## Not for export

Michael Thorne on mathematics software from the Scottish Microelectronics Development Programme

proof, offers a teacher considerable flexibility of use and has pupil appeal. On the other hand, amateur software is something a teacher knocks up in his or her back room, under considerable time pressure to meet the particular exigencies of a certain group of pupils.

In practice, both sorts are extremely valuable, but amateur software is bound up in its author's approach and teacher's presence in the classroom. Thus, amateur software is strictly not for export.

All three of these SMDP packages correspond to amateur software in Spielmann's taxonomy. For example, *Area Under a Curve*, one of the *Secondary Mathematics 1* programs, allows you to watch the construction of successive rectangular approximations to the area under a curve — but only for the curves  $y=x$ ,  $y=x^2$ ,  $y=x^3$  and  $y=x^4$ . Having typed in the necessary limits, the user presses the spacebar when prompted and the region is in turn divided into 4, 8, 16 and 32 strips and the total area of the rectangles computed each time. After that, the computer takes over and repeats the process for 64, 128... strips until it

can sub-divide no more. Then a summary of the approximations is displayed.

*Channel Crossing* is a good solid, old-fashioned and boring class of maths problem put onto the computer screen. For its authors this was probably successful, but *Racegame*, *Reflect* and *Vectmee* from SMILE (ILEA) lead us to expect more exciting things than this.

*Disc* simulates the rolling of two dice and displays frequency bar charts. Five years ago, every MUSE member had such a program, but we've come a long way since then.

The primary level material is no more interesting. There is a game on tables, where the player starts with 50 worms which he or she can destroy, either by answering questions correctly or by blasting the worms directly with a cannon at the end of each group of five questions, and a space adventure where three correct answers to three consecutive addition or subtraction sums are rewarded by the opportunity to kill the Klingon ship or to attempt the Road Race game.

According to the documentation, the six programs in *Early Mathematics*

"provide an excellent resource for children learning to count, manipulate numbers and identify plane shapes". But the pace is too slow, even for infants. Having decided which numbered shape is a rectangle, it takes ages for the answer to be bounced out by the shape. Also, children are not warned not to press the ESCAPE key — next to the I key on the BBC Micro — as this will restart the program.

Count involves counting the number of shapes; get it right and you get a tick and the digit for that number is formed as you watch. Better not make any typing errors — you are not allowed the opportunity to correct them.

Surely the humanity which is missing in these programs would have been supplied in the classroom by their authors. But as they stand one can only call to mind Dorothy Parker's lover who, she said, ran the whole gamut of emotion from A to B: these SMDP programs get ZZ on the same scale.

ing whales, flashing colours and optional tunes. The booklet is a model of clarity, and has clear guidelines on teaching ideas for different age groups. Infant and junior teachers who saw the programs, thought them eminently usable. Children were, at least initially, attracted to them and, when faced with the appropriate level of challenge, made obvious progress.

This kind of carefully thought-out computer assisted learning will inevitably be welcome in many primaries, and used sparingly, at the right moment for a particular child or group, will have a useful place.

But when schools have only one or two computers and a limited range of software, it's a pity if children meet computers mainly through such Skinnerian programmes, firmly under the control of the programmer and teacher, rather than through more creative and challenging and open-ended uses, many of which also foster mathematical skills.

Virginia Makins

## Wagging dogs and spouting whales

## It speaks for itself

Have you ever wished your computer could speak? No, not a metallic computer voice which uses large chunks from the computer memory. We mean an intelligent, friendly and everyday human voice.

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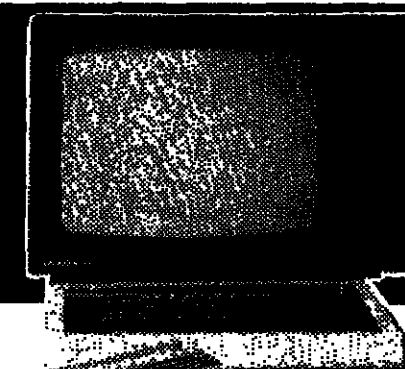
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EXTRA

# MICRO & MACRO economics

David Whitehead reviews a programmed learning approach to economics

**Economics in Action**  
12 disks for BBC Model B and six study guides £175; individual parts £55 each; pack of five study guides £3.50 (prices exclude VAT)  
Philip Allan Computer Software, Market Place, Deddington, Oxford OX5.

This set of six introductory economics programs consists of units on elementary and intermediate theory of supply, demand, and macroeconomics. Each part (which may be purchased separately) comprises a theory disk, and interactive disk and a study guide. Additional study guides may be bought in packs of five.

The level of exposition is geared to the A level and college student, though the intermediate macroeconomics section develops IS/LM analysis beyond the introductory stage. The analysis is restricted entirely to "pure theory" and is meant to accompany the teacher's course rather than be a substitute for it. It would certainly need to be supplemented by real-world examples.

This is the first application of the "programmed learning" approach to economics instruction on the micro, and it has the same advantages and drawbacks as PL had in its brief

flowering in the early 1970s. The left side of the screen is used mainly for text, and the right for graphical analysis. The only slight difference between the theory programs and a textbook is that they enable graphs to be built up step by step, but good teachers do that anyway. Indeed, it is irritating to have to wait for lines to be completed, arrows to stop moving, and little men to run up supply curves. Bright students will find some of the visual presentation patronising, childish and slow.

The programs make use of the BBC Micro's graphics and colour capability, the former for providing a model of the production process, with a noisy factory producing hi-fi units - though the effect is embarrassingly naive, and the threefold repetition will alienate lots of students.

After spending hours working through the entire program, it is difficult to see how it improves on a good teacher and a well-written textbook. Certainly some sections of the theory are exceptionally clearly explained, but the treatment is bland and too divorced from real-world economics.

Part 1 deals with elementary supply and demand, mostly innocuous and well-worn narrative, though the change from quadratic to linear de-

mand functions will perplex the mathematically-minded student. It is rather disorientating to be told in this program that elasticity of demand is always positive (because the authors define it as percentage rise in quantity demanded divided by percentage fall in price). Teachers will not be amused by this iconoclastic presentation of standard theory. Questions for discussion are interspersed with the text, though no

**"Some sections of the theory are exceptionally clearly explained, but the treatment is bland and too divorced from real-world economics"**

answers are provided. Each booklet provides the background notes for the interactive disk.

Part 2 covers the theory of supply and demand. The explanation of the effects of a per unit tax on the market for a good is lucid. On several occasions the authors imply that the demand for a good may be own price elastic throughout the range of prices; a most unlikely assumption. With all these exercises, the assumptions are

very unrealistic and may reduce student motivation.

Elementary macroeconomics is explained succinctly in study guide and program 3, though with occasional odd digressions, such as dealing with an unstable equilibrium, using the illustration of an aggregate demand function intersecting the 45° lines that are in fact 40°, which distorts the savings and consumption functions' relationship. Each interactive disk supplies a few multiple choice questions, which follows a set pattern. For example, the user is asked what the consumption function looks like if the marginal propensity to consume falls as income rises. Three functions are then slowly drawn on the screen, first separately, then together, and a choice is made. The routine becomes tiresome after a while.

The macro simulation asks the user to role-play the PM, and to set government spending for five time periods. Expected investment is given, but actual investment is so different from this that it is difficult to make a rational decision. All the simulations would benefit from guidance about how they might be used.

Part 4 on intermediate demand contains an excellent build-up of a demand curve from an indifference map and budget lines. In Part 5, the

treatment on monopoly is unusual in that the diagram normally used for long run equilibrium in imperfect competition is given as one possible position for a monopolist (when making zero profits). Only monopoly and perfect competition are treated.

The simulation for this part asks the students to behave like a monopolist, and set a level of output; but the price charged is not determined by the monopolist, once again an unrealistic assumption. It is sales over which he has no control.

The final part takes us deep into macroeconomics, though the absence of a trade sector is not explained. Assumptions now come thick and fast, for example that the rate of interest has a major influence on investment, that the government can control the money supply fairly precisely and that money can be clearly defined. All these issues would have to be taken up by a teacher. The authors' view is that Keynesians believe such-and-such, whilst Monetarists believe something else. Not a very scientific note on which to conclude. What is the evidence?

Dr David Whitehead is Senior Lecturer in Education at London University Institute of Education.

## From bad to worse

David Walker tries out a new wordprocessing package

they must override the cassette default instead of making them find out the hard way?

Having overcome the saving problem, I was better prepared for the next stage: printing. After my first few attempts were unsuccessful, I tried the Alter command again; a sub-command Printer revealed that serial printer type and B changes the baud rate.

I question the wisdom of default to a serial printer (parallel printers being commoner in classrooms) and see no excuse for failure to document it. Since you have to break out of the program to issue a \* command, I had to re-load text several times to achieve a print-out. Each time, I had to use Alter twice

After repeated attempts, frustration mounting, I re-read all the notes and found casual mention of the Alter command, which has a handy sub-command called Storage for changing from tape to disk. This worked fine but leaves two questions unanswered: why market software on disk in a form that resets the BBC from disk to cassette mode? Second, why not tell users that

to change to disk mode and parallel printer. The program began to seem downright user-hostile.

You enter text in Insert mode but have to exit (by pressing CTRL-O) even for basic operations like moving the cursor. In Insert mode, the left arrow and Delete key both delete left. However, in Delete mode the right arrow deletes right and left arrow restores, which is confusing.

There is no word wrap and you have to go into command mode and format text (press J) just to see where the line will end. Eighty-column preview is not available so draft print-outs are unavoidable. There is no scope for block operations - surely the hallmark of electronic cut-and-paste.

In summary, this is at best a crude demonstration of wordprocessing features, rather than a wordprocessor. In no sense does it fulfil its claim to introduce pupils to modern wordprocessing. Designed originally for the 3802, this program makes no use of the BBC's red function keys, and each user has to wade through pages of alternative instructions for the other two machines.

A wordprocessor claiming to be "simplified" should not actually complicate matters. It may once have served a purpose as cheap, simple word-processing software. Now that many well-designed and properly documented programs are available, why try to make one package do for all three micro?

The product of a government-sponsored programme and reputable publisher deserves to be judged by professional standards. This one is shockingly produced, inaccurately documented and poorly designed. Its only redeeming feature is that it is cheap. Pupils deserve better software than this at any price.

David R F Walker is Acting Head of the Geography Department at Loughborough University of Technology.



**Election Simulation**  
Available on disk for BBC (40 track and 80 track) and Apple II micro-computers.  
£3.50 + VAT  
Scottish Microelectronics Development Programme  
Heinemann Computers in Education, 22 Bedford Square, London WC1B 3BH.

This program simulates elections in four hypothetical constituencies. Each constituency has sharply defined characteristics reflected in the statistics provided for employment, housing, education, Coventry North-West, a Labour/Conservative constituency, has 65 per cent council house occupancy and 5 per cent of its pupils in independent schools.

Rural Norfolk South, a safe Conservative seat, has a high proportion of its constituents in privately rented accommodation and a relatively low percentage of owner occupiers. Upper Clyde, a safe Labour seat, has 65 per cent employment in the shipbuilding industry and a mere 1 per cent of its pupils in independent schools.

Edinburgh City, a four-way marginal with a considerable SNP presence, has 60 per cent employment in clerical/office jobs and 10 per cent council house occupancy.

The campaign is fought on the basis of 24 policies which are categorized as left, centre, right and Scottish. Each party has its own set of policies (the SNP is allowed more than the rest) from which the candidate chooses a manifesto embracing the four policies most likely to win the seat. A candidate can choose only those policies endorsed by the party. As a concession to the demand for some form of gamesmanship, pupils are invited to predict the winner of the seat without this has no bearing on the outcome. The computer then presents the final result.

The simulation is aimed at pupils aged 15 and over. A good grounding in modern British politics is an essential prerequisite. Pupils will need to be aware not only of the processes in-



Gorman Stafford and John Tuey look at a new election simulation

involved in the development of party policy and of candidate selection, but also the precise meaning of specific policies and their potential popularity in a given area.

The program sets itself the task of helping pupils understand the relationships between voter behaviour, constituency characteristics, party policy, the policies appropriate to the constituency and the effect of these policies on the performance of rival candidates. This is a tall order. For most pupils it will probably be a sufficient achievement simply to appreciate that such relationships do exist.

Repetition and the re-running of a seat are essential to the success of the

simulation. In the right circumstances the Liberals can win in Coventry, the SNP can win in Edinburgh City and the Communists can win in Upper Clyde. However, even the finest tuning of Labour policy matched with wildly inappropriate Conservative policies does seem to leave Norfolk South beyond the reach of Labour. Similarly a marginal seat may be run with one party manifesto fixed but with the introduction of slight changes in the policies of other candidates. In this case a seat may be won or lost purely as a result of minor changes in an opponent's manifesto.

The limits of complexity have to be drawn somewhere, but it does mean that there is no allowance for the

personal appeal and character of an individual candidate. Nor is it immediately clear what influences turnout. While we are given the results of the last constituency elections, there are no indications as to what policies have actually produced these results. There is much to be learned here, some of it at a quite sophisticated level. The instructions are clear and the suggestions for the organization of the simulation and for further work are rooted in classroom commonsense. For those not using a print-out it would have been useful to see a party's policies on a single display and also to see the policies recorded as they are selected. A great deal has to be kept in the head.

**DISK/CASSETTE TRADE-IN**  
Garland Computing are offering a free replacement service for customers who buy cassette software and subsequently upgrade to disk. Along with this news is the announcement that the prices of many of their programs have been reduced due to economies brought about by the increase in disk sales.

Details and titles of over 50 educational programs for primary, secondary and higher education can be found in their 1984/85 catalogue, which is now available from Garland Computing, 35 Dean Hill, Plymouth PL9 9AF.

**ASK FOR TIME SKILLS**  
"Time Trucker" is a new program to help children aged 8-14 understand the relationship between the 12-hour analogue and the 24-hour digital clock. The relationship between time and distance is reinforced by a tory driving round country roads collecting a full load of farm produce and returning to the depot within a specified time limit.

The program caters for three ability levels with separate games, using music and graphs for rewards. A single cassette, which includes fast loading by Novaland, costs £7.95 from Tracey Robins, Applied Systems Knowledge Ltd, London House, 68 Upper Richmond Road, London SW15 2RP.

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EXTRA

Caretaker  
ROM for the BBC Micro  
Price £33.35  
Computer Concepts, Gaddesden  
Place, Hemel Hempstead, Herts HP2  
6EX.

*Caretaker* is an odd name for what is really a BASIC programmer's friend and toolkit on a ROM chip. Anyone who has spent hours on a long program, and unwisely tried to run it before saving, knows the teeth-grating frustration induced by the "Bad program" message. For pupils and teachers alike, a built-in facility for recovering crashed or corrupted programs is a high priority.

*Caretaker* makes this simple with \*RETRIEVE, which reconstructs as many bytes as you ask for. It offers 17 other commands on permanent call. Some are simply mnemonic alternatives for existing commands, like \*CURSOR OFF for switching off the cursor. Others provide major shortcuts, like \*SINGLEKEY which permits entry of the Electron set of Basic keywords at a single keystroke. The key-stickers provide neat signposting of this alternative keyboard if carefully applied to the fronts of clean keys. For hunt-and-peck typists, especially those used to an Electron, a BBC with *Caretaker* and keystickers could cut programming time substantially.

## Forward 100

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Ray Hammond

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# Caretaker and keystickers

Jacquetta Megarry on a friend for experienced Basic programmers

Although the keystickers need not upset other users, regrettably the single-key feature can cause memory conflict with some software. This can be resolved without removing the ROM by typing \*NORMALKEY. Why on earth didn't Computer Concepts do it the other way around (as they quickly did with their *Graphics ROM*)? Any ROM whose default choices can cause conflict with existing software should be switched off unless specifically enabled. If you are enough of a programmer to need *Caretaker*, typing something presents no obstacle. To a nervous first-timer who is trying to load a program, unexplained failure can be bewildering and upsetting.

*Caretaker* assists editing with commands like \*EXCHANGE which can be used to search, or search and replace, keywords or variables throughout a program, using wildcards if necessary. This is both more powerful and more convenient than spooling a program to edit it using a word-processor. \*MOVE relocates the current program and adjusts PAGE, LOMEM and TOP automatically. \*KEYSAVE and \*KEYLOAD respectively save and load definitions of the red "soft" keys, a major timesaver in programming and wordprocessing. *Caretaker* supplies the filename "keez" if you don't override it. A school might provide an extension keyring showing a standard set of soft key definitions stored under "keez".

Other editing aids include \*RE-

NUMBER which re-numbers part or all of a program and produces a sensible error message if there is danger of overlap. Unlike Basic's re-number command, it needs no extra RAM. \*TABSTOPS provides the Tab key with the typewriter tab function which Acorn inexplicably failed to give it. The default choices are sensible and easily overridden if you want. This is invaluable in laying out screen menus, for example.

\*PARTSAVE and \*INSERT provide excellent encouragement to build up a library of subroutines and procedures on disk by saving parts of a program and later inserting them in other programs. (Unlike the \*SPOOL and \*EXEC method of doing this there is no fear of unwanted line number clashes.) \*MERGE is the alternative for when you want lines to overwrite each other.

If you ever run out of RAM, you will find \*SQUASH is a powerful three-pronged squashing device for long programs: you can instruct it to strip out all unnecessary spaces, to delete REMarks, or to create multiple line statements. The rapid reduction in RAM when you use all three is truly remarkable. Naturally, there is a loss of program legibility, and \*EXPAND makes the converse process delightfully simple. Unfortunately it doesn't indent FOR...NEXT loops.

*Caretaker* provides useful debugging aids like \*FVAR, which lists any or all the variables, functions and proce-

dures in the current program. \*STATUS displays program length and available memory and lists the values of PAGE, TOP, LOMEM, HIMEM and "vartop".

The *Caretaker* manual is clear and gives useful lists of error messages, parameters and Basic keywords and tokens. The ROM's Help menu reminds you what commands are available and gives their syntax. Its general style and operation come naturally to anyone used to Computer Concepts' *Wordwise*, *Graphics ROM* or *Primaster*. This is a factor to weigh when comparing the attractions of other ROMs that seems to offer more for less. Utilities like *Addcom*, *Toolkit* and *U-Tools* all cost £5 or £6 less and offer broadly similar facilities.

Simplistic comparisons of the number of commands available should be resisted however: unless a command is powerful, useful and easy to remember, it won't be used and might as well not be there.

With the proliferation of competitive and attractive firmware, schools (or i.e.a.s?) must purchase with care and work out how users will get access to ROMs. For a single BBC, the choice is between allowing rotation of the ROMs (eg a Zero Insertion Force ZIF socket on the keyboard or a lucky Solidisk unit) or simultaneous access with a ROM extension board. Lucky schools with several BBCs can plan different combinations, though a good labelling system is vital, especially

since a disabled ROM doesn't respond to \*HELP.

Still, if a school's only BBC has just one vacant ROM slot left, it should examine *Caretaker*'s competition. At least eight other utilities are already available and, by the time this is published, doubtless there will be more. For example, *Addcom* (from Vine Micros of Sandwich, Kent) offers graphics facilities like colour fill, scaling and rotation and *Logotype* graphics; these may be rather basic, but if you haven't already got a *Graphics ROM* they may be better than nothing. Similarly, *U-Tools* (from Intersoft of Nottingham) provides screen dumps for Epson-compatible printers. Again, the facilities do not compare with *Primaster*'s, and your choice will depend on your starting point.

Advance planning is essential since ROMs from different sources will not coexist peacefully for technical reasons. I have had lengthy conversations with manufacturers about who to blame for this. All very fascinating, but schools investing scarce cash won't want to be caught in the cross-fire. Sticking to a single reputable manufacturer may be a wise precaution in the absence of compelling reasons to change.

## Too good to be true

Das Schloss. By Chris Somerville  
Cassette for the Sinclair Spectrum  
Chalksoft, 37 Willowlea Road,  
Worcester WR3 7QP.

"Learn German words with *Das Schloss*," says the cover of this brightly packaged cassette. "Das Schloss" is a game which teaches and tests your knowledge of German vocabulary. These programs are an invaluable aid to children or adults who are learning German. In fact they are useful to anyone - tourists included - who want to brush up their German vocabulary."

Too good to be true? Yes, but unfortunately it is the stuff that sells an eager public looking for cheap educational software to take home.

Basically this cassette does nothing to "teach" German words. Instead it works on the level of guess the word - "der - - - - - (cue pupil). If you know enough to guess the word, you're half way there; if you type in s-b-6 (because 6=U)-e-r, then you're well on your way to being a "master builder".

The program simply offers a menu of subjects from which to pick - The Family, School Words, Words for Travellers. . . . Then you are given the words to guess, one after the other, which gets extremely tedious. If you only fill in five letters where there should be six, you're stuck. The program won't move on unless all the spaces are filled, right or wrongly. If you get the answer wrong, the correct answer flashes up on the screen. You then have to go back and type it in yourself.

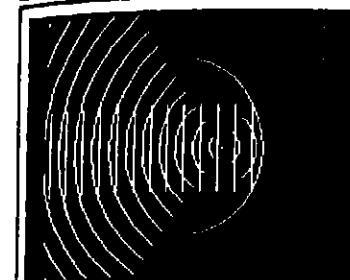
That is at least some kind of reinforcement in the learning process, but having filled in the right answer you're then asked to "say" it. At no point are you taught the pronunciation and if you say it wrongly, it will remain uncorrected - negative reinforcement.

This program like so many others fails to consider what facilities the computer offers. For an individual working purely with a keyboard and video, attempts to introduce speaking skills are futile. The written words can be printed on the screen, but a more imaginative program would have tried to use more German and less English. Instead of programming the computer to respond to Yes and No, it could have used Ja or Nein. Instead of printing with "Well done", it could have said "Sehr gut".

The graphics too are unhelpful. When images of cats, dogs and blackboards might have reinforced the German words, Chalksoft's attempt to repeat the game element of the original is a pity. This is not only a waste of resources, it is also a sorry waste of resources.

Gillian Macdonald

EXTRA



The Electromagnetic Spectrum

Setting up a microcomputer for a particular lesson at a particular time often presents enough problems in itself, but organizing a video recorder and television as well may sound like just too much to expect. . . and why do it, you may ask? Surely using one at a time is quite adequate and perfectly appropriate.

This is right. Both educational television and software are generally used very successfully on their own for various purposes. The *Science Topics* series can be different. It can be used as an ordinary, independent piece of educational television; but it can also be used with computer software. This is the first time that television programmes and software packages have been designed to be used together for common teaching purposes.

Television and computers are complementary media. One of the greatest drawbacks of using most computer assisted learning material with pupils is the quality of the visual displays. This is becoming an increasing problem as more and more is expected from the educational software written for the type of microcomputers in the classroom.

Text can be attractively displayed and cleverly manipulated to lead the eye around the computer screen and the use of animated graphics has improved enormously as the hardware and software techniques have developed. But when compared to film images and animations, the resolution and the quality is relatively poor.

Pupils expect better. On the other hand television can be stimulating and motivating. It presents powerful, memorable images and can help to introduce different approaches and new applications. It can pose questions and encourage new trains of thought but it makes fewer high level demands on the learner. Film material is easier and so it cannot be interactive. If, however, we combine the flexibility of the computer generated material with film images and sound we have a system with enormous educational potential. Such a system can be created using the interactive videotape or more importantly the interactive motion access videodisc. In these cases the computer controls the visuals and enables film to be integrated with computer generated material as appropriate.

Interactive video is available now, but in its most useful and versatile form it is very expensive, not just in hardware terms but also in the development costs of the material. The future scope and value of such systems for learning is far too significant to be ignored by the educational world, but unfortunately it may be some time before they are widely available in schools.

The *Science Topics* material attempts to bridge the gap by bringing together the advantages of television and software, but by using the facilities and hardware currently available to teachers. Ten software packages are being produced by the Computers in the Curriculum Project at the Centre for Science and Mathematics Education at Chelsea College to accompany 10 television programmes of the BBC Schools' Television series *Science Topics*, produced by Dr Peter Bratt. The series aimed at 13 to 16-year-olds is appropriate for pupils studying CSE and O level science courses, but it is not related to any particular syllabus. It aims to bring the real world of science into the classroom by considering practical applications and consequences of theoretical scientific facts.

The software, following the same themes takes aspects of the television programmes and encourages pupil participation and investigation. It is intended that the material uses the best of each medium and so provides a teaching package that can do more than either alone. The materials are not designed, however, to be integrated through any software links; both are complete in themselves and can be used separately. However, what is most interesting is their combined use; they are designed to complement each other.

For example, a typical computer simulation. Pupils are placed in imaginary situations to pretend to play roles and make decisions or to perform experiments and carry out investigations. The reality and significance of what they are doing is dependent on their ability to imagine. The teacher can make available additional resource material, photographs, extracts, anecdotes and the like, but a film sequence can produce the sound and vision to make the situation real and stimulate the pupil's interest and imagination.

A beauty spot such as the Slapton Lee Nature Reserve, featured in the *Science Topics* television programme "Ecology", has a delicate balance of nature. However, a detailed study of the interrelationships of the living organisms present is fairly remote from the interests and experience of most pupils. Becoming involved in that environment, "meeting" the people who live and work there, people who have specific and sometimes conflicting interests in the area, makes the place real and its problems come alive in the classroom.

Finding out what can be done to "manage" the area and what happens as a result of various actions is no longer an academic exercise. It is real

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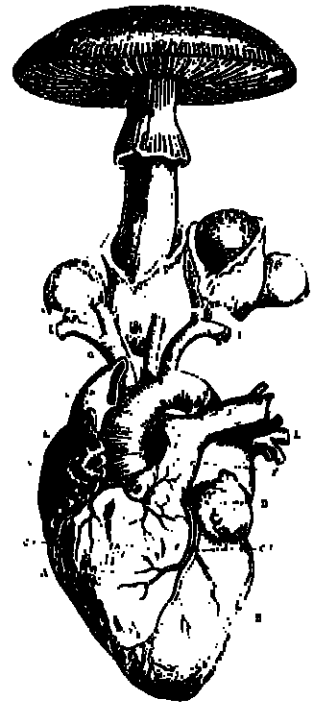
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EXTRA

## EXPERT EASE

The term 'expert systems' is much bandied about, but what exactly does it mean? Mike Doran comes up with some interesting answers



Expert systems arose from a splinter group of the Artificial Intelligence (AI) movement which felt that the ultimate goal of a general-purpose reasoning machine was too far off, perhaps unrealistic, and that something was needed now.

The approach adopted was to write computer programs that could elicit and embody knowledge from experts in the form of facts and rules (about those facts) and apply this "knowledge-base" to the solution of real-world problems. By pooling the knowledge of several experts, and even deducing the rules unconsciously used by them, it should be possible to solve problems which prove particularly insoluble by conventional methods. Such problems are typically ill-defined, complex, subject to change, and dependent on imprecise information.

In an expert system then, the computer is taught about a very restricted domain of human knowledge and can give "intelligent" advice and make "intelligent" decisions within this narrow domain. So, if it's programmed to advise on medical diagnosis, it's not good at asking it about the weather.

The track record of expert systems has been very encouraging. The sort of areas already covered include medicine (prescription of antibiotics for certain bacterial infections), mineralogy (prediction of the presence of mineral ores) and chemistry (structure analysis of organic compounds from spectrometer data).

For the experts the process of developing the systems can clarify their

own thinking and even suggest new lines of reasoning. For the non-expert, the system can provide expert advice through a question-answer process that requires only the ability to respond to the system's questions.

One thing is clear. Expert systems have enormous commercial value, and with such potential for profit, money to exploit them is not in short supply. Already there are consultants staffed by "knowledge engineers" offering to tailor expert systems to requirements. Customers are queuing up to pay millions for the privilege of owning one. Expert systems are big business.

So what is an expert system? Unfortunately, there is no definitive answer at this stage, but it is possible to examine the ingredients of an idealized system and convey the essential ideas. A typical computer-based expert system consists of four main parts.

The knowledge acquisition module establishes a dialogue with one or more experts, enabling them to put their knowledge into the system. This process can be made quite clever, using AI induction strategies to draw out of the experts rule-based knowledge that they are not necessarily aware of when they solve problems.

Alternatively, knowledge engineers interview the experts in a particular domain and try to elicit the expertise to be embodied directly in the system. A knowledge base contains facts and rules. Facts might be data from experimental measurements or conclusions to be formed.

The inference module is the control centre for the system, it asks questions that seem appropriate, compares user responses with the facts and rules stored in the knowledge base, rejects unlikely lines of reasoning, homes in on hypotheses that seem to fit the incoming evidence, and finally reaches a conclusion to a stated level of confidence.

In some systems, induction is included to seek patterns in the incoming information and add the corresponding rules to the knowledge base. It is this that distinguishes it from a conventional database management system in which facts are static entities to be filed or retrieved as required.

In an expert system the stored knowledge is active, changing in content and weighting under system control in response to incoming evidence, providing the capability to tackle questions not encountered before by inference from the knowledge already stored and the incoming evidence.

The enquiry explanatory module is the interface enabling both experts and non-experts to interrogate and use the system. Usually a dialogue proceeds with the system seeking information from the user relating to the problem in hand until the evidence confirms a hypothesis to a satisfactory level of confidence. The user may also ask the system for an explanation of the reasoning behind the information requested and/or the hypotheses conjectured.

With such a modular structure, different knowledge bases can be in-

serted into the system shell as required. For example, an expert system designed to identify poisonous toadstools might, by removing the fungi and substituting lepidoptera knowledge, identify moths and butterflies.

Furthermore, some expert systems work in probabilistic terms, so that they can cope with the imprecise, uncertain information provided by the real world. Although such techniques may lack rigour, they do not the less appear to work. It would seem that in the complex situations represented by knowledge bases, the organization matters more than the accuracy of the numeric values attached to it. The numbers just seem to guide the system in its choice from the many possible routes to the "correct" conclusion.

In the past, expert systems have been confined to large computer systems. More recently, however, modest ones have begun to appear that will run on microcomputers like the IBM PC. For example, *Expert-Ease* is an expert system generator. Give it some examples of fungi that include poisonous varieties, and it will automatically generate some rules that correlate the attribute "poisonous" with other attributes like "colour" and "shape". The resulting expert system could (if well trained) spot poisonous fungi among new examples previously unseen.

A cheaper system, that will run on a BBC Acom microcomputer, is the *Hulk*. However, as a concession to low price, it requires the user to think up the rules, but then goes on to check how well they work. After some trial and error, using say football league table data, you might end up with a collection of rules that is quite good at predicting football match results.

A new system on the market is *ES/P Advisor*. This package offers what the designers call "text animation", or obvious applications include automation of the rule books like *PAYE* regulations, so that the user, perhaps a harassed employer, is led through the taxation maze, sticking only to those sections or questions relevant to the situation in hand.

A simpler and cheaper approach to this may be possible on an extended version of the authoring language *Microtext*, promised shortly for the BBC Acom microcomputer.

At the programming level, AI languages, like LISP and PROLOG are available on many microcomputers, and offer suitable tools for developing expert systems, provided you have the time and energy to get to grips with them. An attractive alternative may be to acquire one of the full LUCO packages, becoming readily available in schools, and use the list-processing facilities (and the graphics for friendliness) to build simple expert systems. If you want to play around with some of the ideas of expert systems, albeit in BASIC, then Chris Naylor's book, *Build your own Expert System*, offers a tongue-in-cheek approach with program listings.

There are a number of possibilities for using expert systems in schools. *Diagnostics* - expert systems have been devised to diagnose specific difficulties a child may have with, say, the mechanics of subtraction.

*Computer Studies* - expert systems may provide project activities, enabling children to construct small knowledge bases for, say, simple fault diagnostics or objective classifications. *Information Technology* - expert systems represent an important breakthrough with the more conventional query-type database systems, and provide children with an insight into manipulating knowledge using computers.

*Learning* - one of the most powerful ways of learning is to try to teach someone else what you know. The computer is an ideal stooge for this purpose. An expert system shell provides the empty vessel, to be filled with knowledge in a particular domain and tested and refined on a succession of new problems. This must represent an exciting opportunity for learning, provided someone (the Microtext Education Programme?) produces a suitable expert system shell for schools to use.

**References:**  
*ES/P Advisor* costs £600 and is available for microcomputers running under CPM-86, MD-DOS, and PC-DOS, from Expert Systems Ltd, 9 West Way, Oxford, OX2 0JB. *Hulk* costs £25 and is available for BBC Acom Model B, and T202 microcomputers, from Brainstorm Computer Solutions, 103a Seven Sisters Road, London N7 7ON. *Expert-Ease* costs £1,725 and is available for IBM PC and Sirius 1 microcomputers, from Expert Systems International Ltd, 4 Carnegie Venture, New St, Royal Mile, Edinburgh EH1 1JF. *Microtext* costs £19.90 and is available for the BBC Acom Model B microcomputer, from Acomsoft, Benjamin House, 104 Hills Rd, Cambridge CB2 3LH. *Build Your Own Expert System* by Chris Naylor, costs £6.95 and is published by Sigma Technical Press, 3 Alton Rd, Wilmslow, Cheshire SK9.

content works interactively, but that the images (films or stills) manipulated by the teaching program are just as carefully designed and produced. Too many discs are wrecked by mediocre or impoverished visuals - and here one must remember that a disc is designed to be seen again and again.

As to whether teachers will welcome this innovative medium, we can only wait until enough players and programmes are made available to schools. The problem is that publishers and others will not invest in software until they see the machines in use, and local authorities won't buy the machines until they see enough programmes being produced. When this situation is resolved, then it is crucial that the teachers themselves are invited into the production process, and in turn, the producers and teachers learn from the student's experience of the technology in the classroom.

**Lawrence Moore**  
*Lawrence Moore is director of New Media Productions, a multi-media production group now involved in the development of interactive videodiscs.*

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## MIDDLE SCHOOL EDUCATION

continued

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School, Wootton Bassett. Age range 8-13 years. Applications are invited from suitably qualified and experienced teachers to fill the post of Deputy Head Teacher at this Group 4 school. The successful candidate will be responsible for the school's day-to-day running and will be expected to work with the Head Teacher at the school







## SECONDARY SCHOOLS

## HEADSHIP

**ERNEST BEVIN (SBI)**  
Barnham Road, Totting, SW17 1DF.  
Applications are invited from suitably qualified men and women for the headship of this school which will become vacant on 22 April 1985, following the retirement of the present headmaster, Mr D. Potter. The school is a well equipped school based on one site offering most rewarding opportunities.

## DEPUTY HEADSHIPS

**DICK SHEPARD (SM)**  
Tate Hill, SW20 2AA.  
Tel: 01-874 9421.  
Head Teacher: Paul Farmer.  
Required from January 1985 as 2nd Deputy Head. A candidate who has already demonstrated success at this level is preferred, able to play a very significant role in the school's development and leadership role in this multi-ethnic school. NJS.

**WALSINGHAM (S.C.)**  
Chapman Green, West Side, SW4.  
Tel: 01-233 7373.  
Head Teacher: Mrs. Alexandra Wilson.  
Required for Summer Term, 1985 Second Deputy Head. The Second Deputy Head will have overall responsibility for the pastoral system and will be expected to revise and develop the school's existing pastoral curriculum and guidance system. There are other major roles associated with this post. NJS.

## SENIOR TEACHER

**MARIA FIDELIS CONVENT (S)**  
34 Phoenix Road, NW1 1TA.  
Tel: 01-497 3556.  
Headmistress: Sister Fidelis Gane.  
Required from January 1985 as 2nd Deputy Head. A candidate who has already demonstrated success at this level is preferred, able to play a very significant role in the school's development and leadership role in this multi-ethnic school. NJS.

## ART

**LADY MARGARET CE (S)**  
Oxhey Road, NW4 4UN.  
Tel: 01-736 7138.  
Headmistress: Mrs. Joan S. R. 0611.  
Required from November 1984 until February 1985 (0.3) Art teacher, with special interest in Textile Printing. Applications, including CV and two references, to the Headmistress, NJS.

## BUSINESS STUDIES

**KINGSLAND (SM)**  
Sheepen Lane, SE21 2EY.  
Tel: 01-234 8722.  
Headmistress: B. M. Stammers.  
Required as 2nd Teacher of Business Studies. NJS.

## Scale 1 Posts

**CHYBURN (SM)**  
Newbury Road, SW12 8ZB.  
Tel: 01-873 8737.  
Headmistress: Mrs. M. J. Boden.  
Required as an experienced teacher of Science, to teach in the Science Department with Typing. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## WALSINGHAM (S.C.)

**Chapman Green, West Side, SW4.**  
Tel: 01-233 7373.  
Headmistress: Mrs. Alexandra Wilson.  
Required as a part-time teacher (0.5) of Science. Studies. Business Studies is taught in the 4th and 5th years and available to A Level Economics in the 6th years. NJS.

## Part-time Posts

**ATLWYN**  
Southpark Road, SE16 3JZ.  
Tel: 01-237 9216.  
Headmistress: E. T. C. Jones.  
Required from January 1985 (0.4) Wednesday & Thursday) teacher of typing. Excellent specialist.

## SPENCER PARK (S)

**Trinity Road, Wandsworth Common.**  
Tel: 01-794 8133.  
Headmistress: Mrs. Tansy Imhoove.  
Required from January 1985. Head of School. Scale 3 to provide a full range of courses and to be responsible for the school's development and leadership role in this multi-ethnic school. NJS.

## CLASSICS

**CROWN WOODS (SM)**  
Hillside Road, Egham, SE26.  
Tel: 01-836 1578.  
Headmistress: Mrs. J. A. Phillips.  
Required from January 1985 as a part-time teacher (0.5) of Latin and Greek. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## DESIGN &amp; TECHNOLOGY

## Posts of Responsibility

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Design and Technology. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## UNIFIED LANGUAGE SERVICE

**Griffin Manor School, Plumstead.**  
Tel: 01-873 8737.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of French. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## SCIENCE

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
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## MODERN LANGUAGES

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Modern Languages. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## SECONDARY SCHOOLS

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## filea

## Inner London Education Authority

Qualified teachers are invited to apply for the following posts. Application forms and further details are available from the Head of the school unless indicated otherwise. Visits to schools by appointment are welcomed.

**Inner London Area Payment (£987 p.a.) is made in addition to the appropriate Barnham Salary scale.**  
JS denotes post suitable for job share (paired applications only) as well as full-time applications.  
A Register for pairing potential job sharers is maintained in EOT/TS4, Room 47, County Hall, London SE1 7PB (Tel 01-633 2386).  
NJS denotes post not open to job share applications.  
Unless shown differently, the closing date for applications is 14 days from publication.  
All secondary schools in the ILEA area are organised along comprehensive lines.  
ILEA is an equal opportunities employer.

## Scale 1 Posts

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John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Science. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## HOME ECONOMICS

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Home Economics. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## Drama

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Drama. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## Scale 1 Posts

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John Felson Road, SE14 4UN.  
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Required from January 1985 as a part-time teacher (0.5) of Science. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

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Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Home Economics. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

## Drama

**ST MICHAEL'S RC (SM)**  
John Felson Road, SE14 4UN.  
Tel: 01-497 3743.  
Headmistress: Mrs. M. J. Boden.  
Required from January 1985 as a part-time teacher (0.5) of Drama. The person appointed will also teach some English. This post has a temporary term in the first instance. NJS.

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## Drama

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Headmistress: Mrs. M. J. Boden.  
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Tel: 01-497 3743.  
Headmistress:



## SECONDARY ENGLISH

continued

### HILLINGDON

#### LONDON BOROUGH OF HILLINGDON

##### TOWNFIELD SCHOOL

Central Avenue, Hillingdon, Middlesex UB3 2DD

(Number on roll: 527 55 in sixth form)

Headteacher: P. Dale-Ough, B.Sc.

SCALE 1 POST (Scale 2 available for suitable candidate)

Required for January 1985, a teacher of ENGLISH and DRAMA to teach both subjects up to examination level. This is a temporary post to cover maternity leave. There is a well equipped Drama room.

Outer London Allowance Payable

Please apply in the first instance by letter to the Head of School, giving the name and address of two referees. 132422

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## LEICESTERSHIRE COUNTY COUNCIL

An Equal Opportunity Employer

### RABINGTON COMMUNITY COLLEGE

Stratford Drive, Beaumont Leys, Leicester

11 - 18 Comprehensive

Roll 780

TEMPORARY

Required January for 2

terms, teacher of English

to O'CE level in this

developing Community

College

Application forms and

further details on request

from Head (SAB). Apply

immediately with full

curriculum vitae and

names and addresses of

two referees to the Head.

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## WEST SUSSEX

### BOGNOR REGIS SCHOOL

Bognor Regis, Sussex BN25 3LH

(Number on roll: 1,630 on roll)

Comprehensive

Scale 1

Required January 1985

well-qualified graduate Teacher

of English to teach to 11-18

level and with active interest

in the development of the

curriculum throughout the

school. Appointment is in

the first of two terms.

Apply by letter to Head-

master, giving details of

qualifications and experience

and names and addresses of

two referees. (132422)

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## SPECIAL DEPUTY HEADSHIPS

**ESSEX**  
HAYWARD SCHOOL, Chelmsford  
Tel: 0201 55667  
Required for this school for children with moderate learning difficulties. Candidates should be suitably qualified and fully committed to expanding the role of the school. Closing date 23rd November 1984.  
For further details please contact the Area Administrator, P.O. Box 358, Chelmsford CM1 1JW (local schools & phone). 160012 (28768)

**KENT**  
COUNTY COUNCIL  
EDUCATION DEPARTMENT  
SPECIAL SERVICES FOR HEARING IMPAIRED CHILDREN  
DEPUTY HEAD  
The County Council has a well-established service for hearing impaired children. There is a comprehensive Audiology and Speech Therapy Unit with a close liaison with health and psychological services.

There will be a vacancy for a well experienced and qualified Teacher of the Deaf arising from the retirement of Mr. J. J. Smith. Candidates should preferably have experience with hearing impaired children and have experience in other fields such as an interest in language development, assessment of children with a hearing loss or Educational Audiology and the testing of babies and small children. Experience and knowledge of the technical side of audiology is also required.

The post is with effect from April 1985 or as soon as possible. Candidates who are unlikely to be available until after this date will be considered. Further details and application forms are available from the County Education Officer, (Ref 77) Springfield, Maidstone, Kent ME14 6JL (see pages) to whom they should be returned by 23rd November 1984.

**TUNBRIDGE WELLS**  
DIVISION  
ST. GEORGE'S SCHOOL, Tunbridge Wells  
Required April 1985  
SECOND MASTER/MISTRESS (Group 6)  
Applications are invited from suitably qualified and experienced candidates with relevant Advanced Qualifications for this important post at St. George's, which caters for children with learning difficulties (Moderate) in the age range 11-18 years. St. George's is a progressive school situated in extensive grounds on the outskirts of Tunbridge Wells.  
Application forms and further details (S.A.E. please) available from the Headmaster, Mr. F. J. Carr who would be pleased to interview successful candidates. Closing date 23rd November 1984. (28568)

**WEST SUSSEX**  
CATHERINGHAM SPECIAL SCHOOL  
Mortons Avenue, Liphinst, Crawley, Sussex BN11 1JL  
Deputy Headteacher required for this school for children with moderate learning difficulties. The successful candidate will be responsible for the whole range of children with moderate learning difficulties and initially will be for a 7 year side in a team teaching situation.  
Details from Area Education Officer, Hove, Sussex BN1 1JL on receipt of P.O. S.A.E. (28508) 160012

**LIVERPOOL**  
EDUCATION COMMITTEE  
DEPUTY HEADTEACHER  
Group (A18)  
INDICLEA SCHOOL, Thingwall Lane, Liverpool L14 7N

Applications are invited from well qualified and experienced teachers for the above school which presently caters for 132 children with a wide range of learning and emotional difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from (S.A.E.) and returnable to the Director of Education, Personal Services Section, 14 Sir Thomas Street, Liverpool L1 5BJ, by 23 November 1984. An Equal Opportunity Employer. Applications irrespective of race, sex, marital status or disability. 160012 (28453)

## Heads of Department

**HAMPSHIRE**  
PERIN'S SCHOOL, New Alford, Hampshire  
11-16 Comp Mixed  
EDUCATION  
Latter of application with full curriculum vitae, names and addresses of two referees and a S.A.E. to the Headteacher. 160018 (27085)

## Scale 2 Posts and above

**BUCKINGHAMSHIRE**  
COUNTY COUNCIL  
MIDDLE SCHOOL, Aylesbury  
Required Easter 1985, a Teacher of the Deaf to run a Department for hearing impaired children at Bedford County Middle School.

**SCALE: 3** re-advertisement and previous applicants will be automatically be re-considered.  
Assistance with removal expenses is given in approved cases.  
Application form (S.A.E.) from, and to be returned to, Education Officer, Aylesbury Vale Area Education Office, Exchange Street, Aylesbury, Bucks HP20 1JL.  
CLOSING DATE: 26 November 1984. 160020

**CAMBRIDGESHIRE**  
LIVEPOOL  
EDUCATION COMMITTEE  
ASSISTANT FOR R.E.  
Scale 1/3  
ARCHBISHOP BECK R.C. School, Cedar Road, Liverpool L9 5AF  
(Mixed)

Required for January, 1985 or as soon as possible thereafter. To assist in the organisation of the school and to provide a range of religious and spiritual education to children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

The City Council is an Equal Opportunity Employer and welcomes applications from people of all races, sex, marital status or disability. 160020 (28454)

**HUMBERSIDE**  
EDUCATION COMMITTEE  
SCUNTHORPE DIVISION  
HEARING IMPAIRED  
TEACHER (P.E. SCHOOL & SCHOOL CHILDREN)  
(S.A.E.)

Applications are invited from well qualified and experienced teachers for the above school which presently caters for 132 children with a wide range of learning and emotional difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from (S.A.E.) and returnable to the Director of Education, Personal Services Section, 14 Sir Thomas Street, Liverpool L1 5BJ, by 23 November 1984. An Equal Opportunity Employer. Applications irrespective of race, sex, marital status or disability. 160012 (28453)

**KENT**  
COUNTY COUNCIL  
EDUCATION DEPARTMENT  
SPECIAL SERVICES FOR HEARING IMPAIRED CHILDREN  
DEPUTY HEAD  
The County Council has a well-established service for hearing impaired children. There is a comprehensive Audiology and Speech Therapy Unit with a close liaison with health and psychological services.

There will be a vacancy for a well experienced and qualified Teacher of the Deaf arising from the retirement of Mr. J. J. Smith. Candidates should preferably have experience with hearing impaired children and have experience in other fields such as an interest in language development, assessment of children with a hearing loss or Educational Audiology and the testing of babies and small children. Experience and knowledge of the technical side of audiology is also required.

The post is with effect from April 1985 or as soon as possible. Candidates who are unlikely to be available until after this date will be considered. Further details and application forms are available from the County Education Officer, (Ref 77) Springfield, Maidstone, Kent ME14 6JL (see pages) to whom they should be returned by 23rd November 1984.

**NOTTINGHAMSHIRE**  
COUNTY COUNCIL  
An Equal Opportunities Employer  
Required for 1st January 1985 or as soon as possible thereafter.  
H.M. DETENTION CENTRE, WHATTON  
SENIOR LECTURER  
£11,175 - £13,185  
and  
H.M. PRISON RANBY  
LECTURER  
£10,815 - £12,810

For full advertisement please see Further Education Section, closing date 23rd November 1984. 380000 (28718)

**LIVERPOOL**  
EDUCATION COMMITTEE  
ASSISTANT FOR R.E.  
Scale 1/3  
ARCHBISHOP BECK R.C. School, Cedar Road, Liverpool L9 5AF  
(Mixed)

Required for January, 1985 or as soon as possible thereafter. To assist in the organisation of the school and to provide a range of religious and spiritual education to children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from (S.A.E.) and returnable to the Director of Education, Personal Services Section, 14 Sir Thomas Street, Liverpool L1 5BJ, by 23 November 1984. An Equal Opportunity Employer. Applications irrespective of race, sex, marital status or disability. 160012 (28453)

**NOTTINGHAMSHIRE**  
COUNTY COUNCIL  
An Equal Opportunities Employer  
Required for 1st January 1985 or as soon as possible thereafter.  
H.M. DETENTION CENTRE, WHATTON  
SENIOR LECTURER  
£11,175 - £13,185  
and  
H.M. PRISON RANBY  
LECTURER  
£10,815 - £12,810

**KINGSTON UPON THAMES**  
ROYAL BOROUGH OF  
KINGSTON UPON THAMES  
DEBELFORD SCHOOL FOR BOYS  
Handicapped Children  
Grade 1, P.O. 5 (215,000)  
under review. We are looking for an experienced and professional teacher to be responsible for Special Services in the school. This post carries an essential cur allowance. Removal expenses are payable in approved cases.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
Required April 1985 or as soon as possible thereafter. A teacher with an interest in and experience with moderate learning difficulties to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**BARNET BOROUGH OF**  
EDUCATION DEPARTMENT  
SPECIAL SERVICES FOR HEARING IMPAIRED CHILDREN  
Grade 1, P.O. 5 (215,000)  
under review. We are looking for an experienced and professional teacher to be responsible for Special Services in the school. This post carries an essential cur allowance. Removal expenses are payable in approved cases.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
Required April 1985 or as soon as possible thereafter. A teacher with an interest in and experience with moderate learning difficulties to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**KENT**  
Inner London Education Authority  
BARKING AND DAAGHAM BOROUGH SCHOOL  
Barking, Essex  
Grade 1, P.O. 5 (215,000)  
under review. We are looking for an experienced and professional teacher to be responsible for Special Services in the school. This post carries an essential cur allowance. Removal expenses are payable in approved cases.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
Required April 1985 or as soon as possible thereafter. A teacher with an interest in and experience with moderate learning difficulties to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**SPECIAL EDUCATION**  
SALFORD  
HEALTH AUTHORITY  
SPECIAL SERVICES FOR HEARING IMPAIRED CHILDREN  
Grade 1, P.O. 5 (215,000)  
under review. We are looking for an experienced and professional teacher to be responsible for Special Services in the school. This post carries an essential cur allowance. Removal expenses are payable in approved cases.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
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Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**ROTHERHAM**  
METROPOLITAN COUNCIL  
KEPPLES VIEW  
OBSERVATION AND ASSESSMENT CENTRE  
Required as soon as possible

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
Required April 1985 or as soon as possible thereafter. A teacher with an interest in and experience with moderate learning difficulties to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**SURREY**  
EDUCATION COMMITTEE  
SUNNYDOWN SPECIAL SCHOOL  
158 Whiteleaf Road, Caterham  
Assistant teacher required for this residential school for boys with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
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Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION COMMITTEE  
GRIMSBY DIVISION  
CARNFORTH SCHOOL  
Grimsby  
Required for January 1985, a teacher to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Carnforth School, Grimsby. Closing date 23rd November 1984. (28128) 160022

**WALTHAM FOREST**  
AN EQUAL OPPORTUNITY SCHOOL  
LEA GREEN SCHOOL & CENTRE  
158 Whiteleaf Road, Caterham  
Assistant teacher required for this residential school for boys with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education and Recreation, Guildford Road, Kingston upon Thames, Surrey KT1 2DZ. Tel: 01-546 5558. Closing date 26th November 1984. (27049) 160022

**CAMBRIDGESHIRE**  
HUNTINGDON AREA  
SPRING COMMON SCHOOL  
Amable Lane, Huntingdon, Cambs. PE18 7TY

(1) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties. (2) Required for January 1985 or as soon as possible. A teacher for one term to teach a class of 15-20 children with severe learning difficulties.

Application forms and further details available from the Director of Education, Huntingdon, Cambs. PE18 7TY. Closing date 23rd November 1984. (28128) 160022

**DERBYSHIRE**  
See Derbyshire Display Advertisements, reference NE/13/2 Page 1 (27011) 160022

**HAMPSHIRE**  
THE WINTON LODGE  
Roughwood Lane, Andover SP10 6PT  
Required April 1985 or as soon as possible thereafter. A teacher with an interest in and experience with moderate learning difficulties to take a class of 15-20 children with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Director of Education, Andover, Hampshire. Closing date 23rd November 1984. (28128) 160022

**HEREFORD AND WORCESTER**  
COUNTY COUNCIL  
CHAISGROVE SCHOOL, Meadow Road, Catehill, Bromsgrove  
(Tel: Bromsgrove 71511)

**TEACHER** (Scale 1 plus Special Schools Allowance)  
Required from January 1985 at this school. A physically handicapped child in the reception area with moderate learning difficulties. The successful candidate will be responsible for the provision of a mainstream and specialist curriculum and medical and other services as appropriate. Applicants are asked to indicate their curriculum interests.

Application forms and further details available from the Headmaster, Chaisgrove School, Bromsgrove. Closing date 23rd November 1984. (28128) 160022

**HUMBERSIDE**  
EDUCATION







## Mathematics

## Heads of Department

## SURREY

**MATHEMATICS - HEAD OF DEPARTMENT**  
 Preparatory School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Other Assistants

## NORTH YORKSHIRE

**SCARBOROUGH COLLEGE**  
 Preparatory School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Modern Languages

## Other Assistants

## BUCKINGHAMSHIRE

**DAVEY SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## DEVON

**ST. PETER'S SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## SURREY

**CRANLEIGH PREPARATORY SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Music

## Heads of Department

## YORKSHIRE

**ST. MARTIN'S SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Physical Education

## Other Assistants

## KINGSTON

**REQUIRE JANUARY 1985 I.A.P.S. SCHOOL**  
 Enthusiastic qualified teacher required for January 1985. The successful candidate will be responsible for the teaching of Physical Education and will also be responsible for the running of the school's sports club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Other than by Subject Classification

## Heads of Department

## SUFFOLK

**IPSWICH SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## Other Assistants

## CAMBRIDGESHIRE

**ACREMOND HOUSE SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## KENT

**NEW BEACON SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## LONDON

**LADY EDEN'S SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## LONDON

**PARAYHOUSE SCHOOL**  
 Prep. School (I.A.P.S. 120 boys) requires for January 1985 a well qualified teacher of Mathematics who has wide experience of Public School requirements for Common Entrance and Scholarship. The successful candidate will be responsible for the teaching of Mathematics and will also be responsible for the running of the school's mathematics club. Salary: £12,000 per annum. Apply in writing to the Headmaster, The Preparatory School, 120, The Avenue, Epsom, Surrey KT8 1PB. (26015) 204224

## APPOINTMENTS IN SCOTLAND

## BANFFSHIRE

## ABERLOUR HOUSE

## APPOINTMENTS

## MATHEMATICS/SCIENCE

## Wanted for September 1985

## a teacher of

## mathematics and/or science

## to take charge of one of

## these subjects.

## The School is committed

## to a high standard of

## teaching and it is

## important that a mathematician

## should have sympathy with

## this approach to mathematics

## teaching.

## A scientist should be at

## least a competent

## mathematician and be

## able to give remedial

## teaching to pupils who

## are struggling with

## the subject. The school

## is a day school with

## boarding facilities for

## boys aged 10-13.

## Salary: £12,000 per annum.

## Apply in writing to the

## Headmaster, The

## Preparatory School,

## 120, The Avenue,

## Epsom, Surrey KT8 1PB.

## (26015) 204224

## SUFFOLK

## IPSWICH SCHOOL

## Prep. School (I.A.P.S. 120 boys)

## requires for January 1985

## a well qualified teacher of

## Mathematics who has wide

## experience of Public School

## requirements for Common

## Entrance and Scholarship.

## The successful candidate

## will be responsible for the

## teaching of Mathematics

## and will also be responsible

## for the running of the

## school's mathematics club.

## Salary: £12,000 per annum.

## Apply in writing to the

## Headmaster, The

## Preparatory School,

## 120, The Avenue,

## Epsom, Surrey KT8 1PB.

## (26015) 204224

## KENT

## NEW BEACON SCHOOL

## Prep. School (I.A.P.S. 120 boys)

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## Salary: £12,000 per annum.

## Apply in writing to the

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## Preparatory School,

## 120, The Avenue,

## Epsom, Surrey KT8 1PB.

## (26015) 204224

## LONDON

## PARAYHOUSE SCHOOL

## Prep. School (I.A.P.S. 120 boys)

## requires for January 1985

## a well qualified teacher of

## Mathematics who has wide

## experience of Public School

## requirements for Common

## Entrance and Scholarship.

## The successful candidate

## will be responsible for the

## teaching of Mathematics

## and will also be responsible

## for the running of the

## school's mathematics club.

## Salary: £12,000 per annum.

## Apply in writing to the

## Headmaster, The

## Preparatory School,

## 120, The Avenue,

## Epsom, Surrey KT8 1PB.

## (26015) 204224

## CENTRAL

## REGIONAL COUNCIL

## AN EQUAL

## OPPORTUNITY EMPLOYER

## EDUCATION

## DEPARTMENT

## Permanent Full-time

## TEACHER OF BUSINESS

## STUDIES AND

## ECONOMICS

## WOODLANDS HIGH

## SCHOOL

## Falkirk

## Tel: Falkirk 29615

## Further details are

## available from the

## Director of Education,

## Room 205, Viewforth, Stirling

## to whom completed

## forms should be returned

## not later than

## Monday, 19th

## November 1984.

## TEMPORARY FULL-TIME

## VISITING TEACHER OF

## MUSIC

## (Primary)

## No. 1000/Falkirk Area

## Applications are invited

## from suitably qualified

## and experienced teachers

## to whom details of this

## appointment will be

## sent on request. The

## post is temporary in the

## first instance.

## Application forms are

## available from the

## Director of Education,

## Room 205, Viewforth, Stirling

## to whom completed

## forms should be returned

## not later than

## Monday, 19th

## November 1984.

## SECONDARY SCHOOLS

## PROMOTED POST

## DEPUTY HEADTEACHER

## JEDBURGH GRAMMAR SCHOOL

## Roll 463

## Responsibility Payment £23,210 per

## annum

## TEACHING POST

## TECHNICAL EDUCATION

## HAWICK HIGH SCHOOL Roll

## 1332

## TEMPORARY POST

## PHYSICAL EDUCATION

## SELKIRK HIGH SCHOOL Roll 575

## (Boys Classes)

## (Remainder of Season)

## 1984/85 only

## Closing date: 23 November 1984

## Application forms and further details may be obtained from the

## Personnel Department, Regional Headquarters, Newtown St.

## Boswells TD8 0SA. Completed forms should be returned to the

## Director of Education at Regional Headquarters. (5678)

## REGIONAL COUNCIL

## Borders

## LOTHIAN REGIONAL COUNCIL

## DEPARTMENT OF EDUCATION

## TEACHING APPOINTMENTS

## Applications are invited from registered teachers for the undernoted posts.

## PRIMARY

## HEAD TEACHER

## Reference B

## Orwell Primary School

## Responsibility

## Allowance

## £2048

## PRINCIPAL TEACHER

## Reference B

## Tynecastle High School

## Physics

## (subject to review)

## Reference C

## Dalketh High School -

## Home Economics

## (Re-advertisement)

## Reference C

## Dalketh High School -

## Physics

## (subject to review)

## TEACHER

## Reference A

## Reference B

## Knox Academy - Technical

## Education

## Boroughmuir High School -

## Business Studies/Economics

## Salaries will be in accordance with the current Scottish Teachers' Salaries Memorandum.

## Candidates should specify for which posts they wish to apply.

## For post marked Reference A

## Divisions Education Officer, East Lothian Division, Council Buildings, Court Street, Haddington, East Lothian EH41 5HA.

## For post marked Reference B

## Divisions Education Officer, Midlothian Division, 40 Torphichen Street, Edinburgh EH3 8JJ.

## Closing date for applications is 23 November 1984. (5678)



**Further Education**  
 Dundee College of Commerce,  
 30 Constitution Road, Dundee

Applications are invited for the following post from suitably qualified and experienced persons.

**Senior Lecturer II in**

**Microcomputing**

**Re-advertisement**

**Salary Scale: £10,881-£12,777**

The successful applicant will be responsible for the provision, maintenance, development and scheduling of microcomputer hardware and software throughout the College. There is also a teaching commitment to the Computer Studies Section.

Application forms and further details may be obtained from the Principal at the above address to whom completed forms should be returned by Friday 23rd November 1984. (5674)

**GEORGE HERIOT'S SCHOOL**

Lauriston Place, Edinburgh EH3 9EQ

**TEACHER of**

**MATHEMATICS**

There is a vacancy from 10th December or as soon as possible thereafter for a teacher of Mathematics to teach across the whole range from S1-SVL. Applicants must be registered or eligible for registration with the General Teaching Council for Scotland.

All colleagues are expected to play a full part in extra-curricular activities.

Further details are available from the Headmaster, to whom letters of application should be sent by not later than Wednesday, 21st November. (5689)

## LOTHIAN REGIONAL COUNCIL

## CHILD GUIDANCE SERVICE: BORDERS REGION

## EDUCATIONAL

## PSYCHOLOGIST

## £10,524-£14,766

## Based at The Child Guidance Centre, St Boswells

## Applicants must have an Honours Degree in Psychology, M.Ed or equivalent qualification and teaching experience. A recognised qualification in educational psychology and/or prior experience in child guidance would be an advantage.

## Further information from the Principal Psychologist at The Child Guidance Centre, Tel: St Boswells 25738 or Assistant Director of Education (General Services) Tel: St Boswells 23301.

## Application forms may be obtained from

## The Divisional Education Officer

## Division 2 (Personnel)

## 40 Torphichen Street

## Edinburgh EH3 8JJ

## Closing date is 23 November 1984. (5678)

## Colleges of Further Education















ad NE8 3EL, returnable by 23rd November, 1984.  
(5567)



**Avon**  
COUNTY COUNCIL







